GMC200
Media Converter System
User Guide

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Quality Fiber and RF, Inc.

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Reversion History

Reversion	Date	Reason for change	By
V1.00	Oct. 19, 2006	First draft release	FMC
V1.10	Nov. 27, 2006	Some title reworded	FMC
V1.20	Nov. 29, 2006	SNMP monitor added	FMC
V1.30	Dec. 19, 2006	Web-based management page re-organized and added some more details	FMC
V1.31	Dec. 23, 2006	Loop back test section re-organized	FMC
V1.40	Jan. 15, 2007	Switchover protection and http TFTP firmware update functions added	FMC
V2.00	Mar. 22, 2007	SNMP and management page modified	FMC
V3.00	May 22, 2007	Bandwidth / rate control granularity changed from 32K to 128k. LED for the converter redefined. Telnet function added	FMC
V3.10	July 12, 2007	Added optical transceiver specifications	FMC
V3.20	July 12, 2007	Added drawing for the single fiber converter	FMC
V4.00	July 20, 2007	Added IP ping, dual RJ-45 port, OAPS media converter modules	

Table of Contents

1 Overview 1
1.1 Audience 1
1.2 Features 1
1.3 Specifications 2
1.3.1 Optical Specification 2
1.3.2 10/100/1000BASE-T Electrical Specifications 2
1.3.3 In-band OAM Features 2
1.3.4 IP Ping Features 3
2 Hardware Descriptions 4
2.1 Carrier Center Chassis 4
2.1.1 Front Panel LEDs 4
2.1.2 Rear Panel Power Supply Slots & Fans 6
2.1.3 Rear Panel Management Connectors 6
2.1.4 Physical and Environmental 7
2.2 Remote Converter Unit 7
2.2.1 Rear Panel Connector 8
2.2.2 Physical and Environmental 8
2.3 Network Management Card 8
2.4 Plug-in Media Converter Cards 9
2.4.1 LEDs on the plug-in 100Base-FX Converter Card 10
2.4.2 100Base-FX Optical Port Specifications 12
2.4.3 1000Base-X Optical Port Specifications 13
3 Web-based Management 14
3.1 System Information 15
3.2 Select Chassis 16
3.3 Chassis Information 17
3.3.1 Chassis Details 17
3.3.2 Converter Location 18
3.3.3 Converter Details 19
3.3.4 Converter Status and Configuration 20
3.3.5 MIB Counters 22
3.4 SNMP Configurations 23
3.4.1 SNMP Configurations 23
3.4.2 SNMP Trap Configuration 24
3.5 Network Settings 25
3.6 TFTP Utilities 26
3.7 Other Utilities 27
3.7.1 Alarm 27
3.7.2 Real-Time Clock 28
3.7.3 User Account Settings 29
3.7.4 Serial Port Settings 31
3.7.5 Loopback Testing 32
3.8 Restart Chassis 35
4 SNMP Monitor 37
4.1 Software Installation 37
4.2 MIB Brower Usages 39
5 Command Line Interface (CLI) 43
5.1 Main Command Menu 43

5.2 System Information 44
5.3 Card Commands 44
5.4 Select a Chassis 49
5.5 Network Information 50
5.6 SNMP 50
5.7 Alarm 51
5.8 Set System Information 52
5.9 Retime System Clock 52
5.10 Reset Command 53
5.11 Reboot Command 53

1 Overview

The GMC200 is a high performance, cost effective, carrier grade manageable media converter system, which is intended for applications of the point-to-point fiber-to-the-premises (FTTx) market.

The GMC200 platform offers 100BASE-FX to 10/100BASE-TX conversion or 1000BASE-X to 10/100/1000BASE-TX conversion or other media and protocol conversion in the future releases.

The GMC200 provides remote loopback and in-band TS-1000 OAM capabilities to manage subscriber access network from carrier center side to terminal side, while the embedded management software allows administrators to easily configure features, monitor performance, and troubleshoot the system using command line interface, standard Web browser and Simple Network Management Protocol (SNMP) based network management platforms.

1.1 Audience

This guide is intended for network installers and system administrators who are responsible for installing, configuring, or maintaining networks. This guide assumes that you understand the transmission and management protocols used on your network.

1.2 Features

- Each chassis containing up to 15 media converter (MC) slots plus one network management card (NMC) slot
- Up to 4 chassis managed by a single management unit with one master management card plus three slave management cards
- In-band network management (OAM) communication with TS-1000 standard to manage subscriber access network from carrier center side to terminal side.
- 10/100Base-TX to 100Base-FX media conversion
- 10/100/1000Base-TX to 1000Base-X media conversion
- Single fiber to dual fibers conversion
- Multi-mode fiber to single mode fiber conversion
- Non-blocking store-and-forward architecture enables the forwarding rate to proceed at a full wire speed
- 802.3x flow control for a full-duplex mode and collision-based backpressure for a half-duplex mode
- Egress/Ingress rate management control with 128Kbps granularity
- Optional automatic converter switchover protection
- Programmable remote fault detection (RFD) function
- Remote power on / off detection with dying gasp alarm
- Remote loopback capability for link integrity test

- Dual processor management card for maximize the system performances
- Dual power supply of load sharing or 1 + 1 automatic over features with over-voltage / under-voltage alarms
- Dual fans with monitoring and alarm features
- Standard 19 inch rack mounted.

1.3 Specifications

1.3.1 Optical Specification

- Interface Type: 1000Base-LX /SX
  - Dual multimode fiber (50/125μm), single wavelength 850nm, dual SC or LC connectors, operating distance 550m.
  - Dual multimode fiber (62.5/125μm), single wavelength 850nm, dual SC or LC connectors, operating distance 275m.
  - Dual single-mode fiber, single wavelength 1310nm or 1550nm, dual SC or LC connectors, operating distance 15/40km.

- Interface Type: 100Base-FX
  - Single single-mode fiber, dual wavelength 1310 / 1550nm, SC connector, operating distance 20/ 30 / 50 km.
  - Dual single-mode fibers, single wavelength 1310 or 1550nm, SC connector, operating distance 20 / 30 / 50km.
  - Dual multi-mode fibers, single wavelength 1310nm, SC connector, operating distance 2km.

1.3.2 10/100/1000BASE-T Electrical Specifications

- Speed: 10/100/1000Mbps with Auto-negotiation capability
- Distance: 100 meters
- Duplex: Full/Half duplex
- Cable: UTP 5
- Connector: RJ45
- Interface Type: 10/100/1000BASE-TX
- Automatic MDI / MDI-X cross-over for straight-through or crossover CAT5 cable

1.3.3 In-band OAM Features

- Supports OAM sub-layer which confirms to TS-1000 specification from TTC (Telecommunication Technology Committee).
- Remote converter configuration and status monitoring using in-band OAM frame and not consuming any IP resource and link bandwidth.
- Sends and receives OAM frames to center or remote side.
- Loopback mode to support loopback packet from center side to remote side.

- Far-end fault detection with disable and enable options.
- Link transparency to indicate the link down from link partner.

1.3.4 IP Ping Features

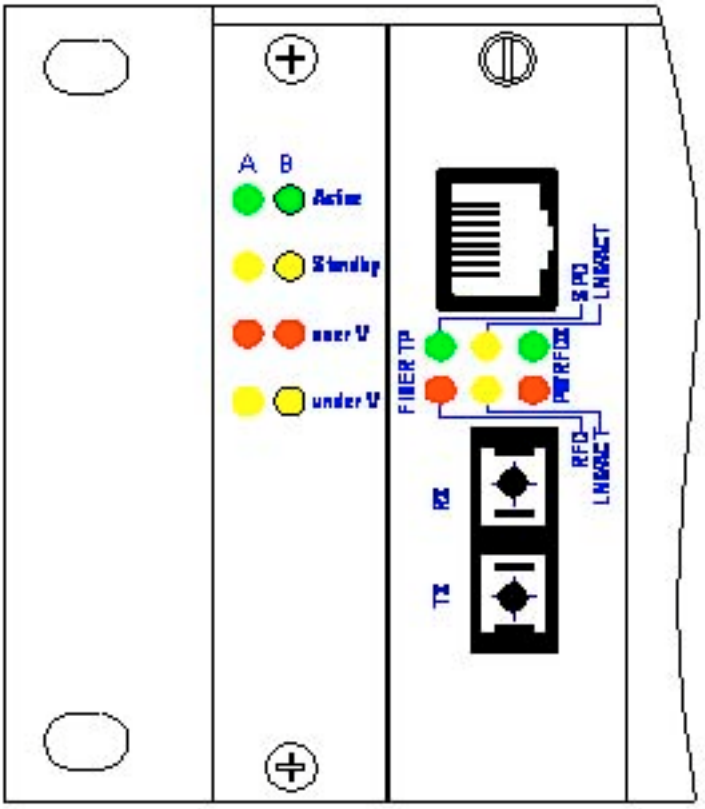
In addition to the in-band OAM features, GMC200 media converter system also supports IP ping function on some MC units, which allows the network manager to monitor the remote media converter at IP level.

2 Hardware Descriptions

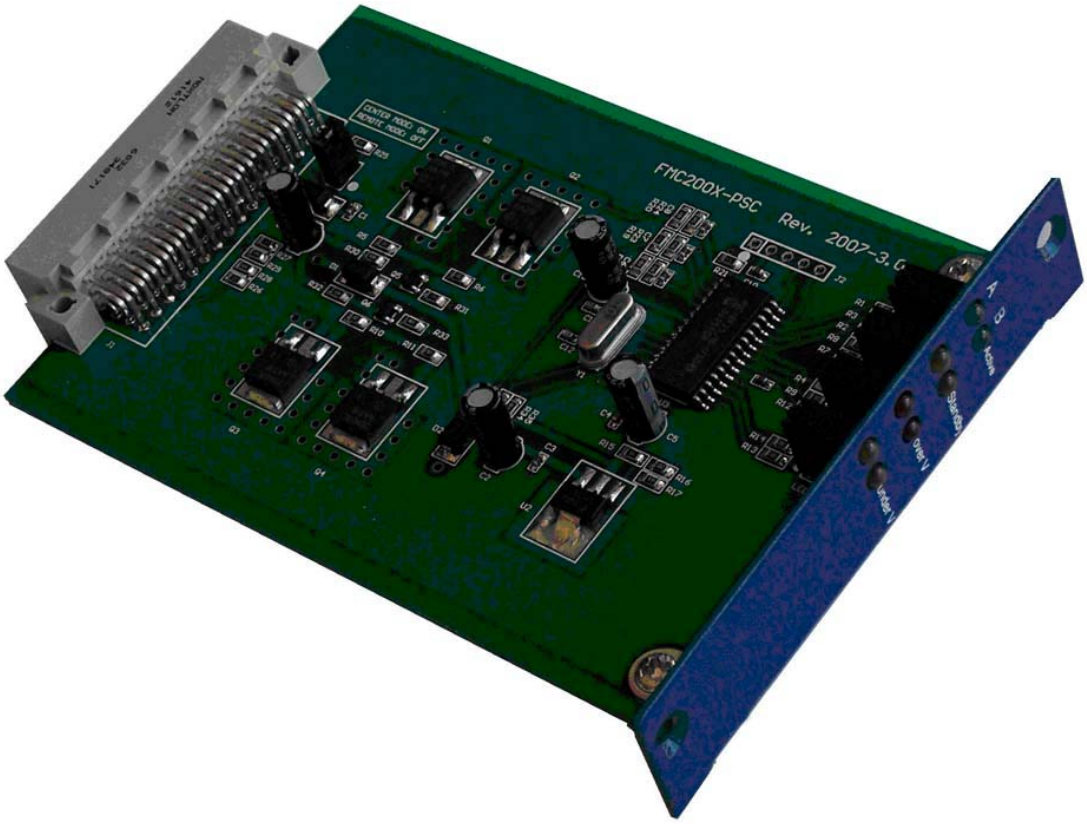
2.1 Carrier Center Chassis

The GMC200 media converter system's carrier center chassis is shown in the following drawings, The whole rack contains 15 pieces of media converter cards and 1 piece of network management card. All plug-in cards are hot-swappable.

2.1.1 Front Panel LEDs



The front panel power supply status LEDs are shown as below:

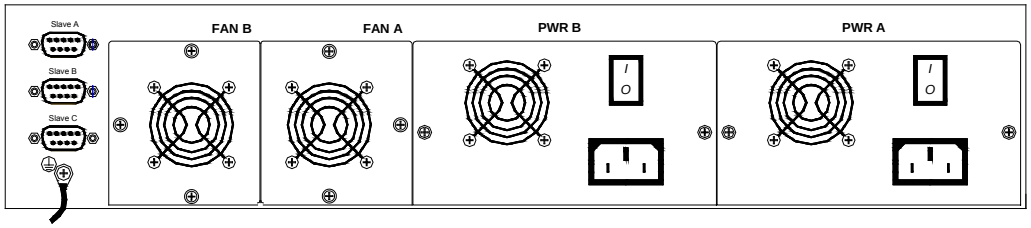


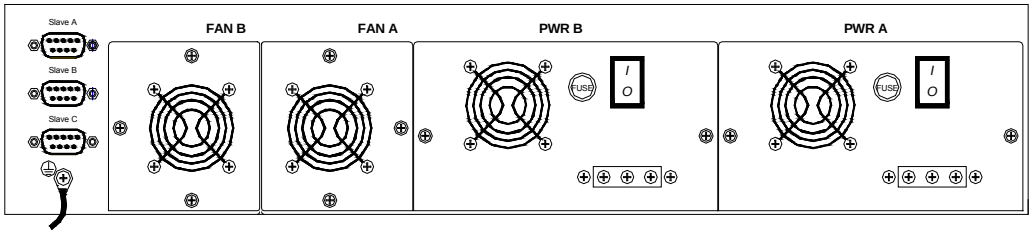
The following table shows the power supply LED definitions:

Label	Color	State	Definition
Active	Green	On	The power is on and supplying the current to the system.
		Off	The power is off or in standby mode. It is not supplying the current to the system.
Standby	Yellow	On	The power is on and in standby mode. It is not supplying the current to the system. It will supply the current to the system immediately when the active power is going off.
		Off	The power supply is off or it is on and in active mode.
Over V	Red	On	The output voltage of the power supply is above 5.5V.
		Off	The output voltage of the power supply is below 5.5V or it is off.
Under V	Yellow	On	The output voltage of the power supply is below 4.5V.
		Off	The output voltage of the power supply is above 4.5V or it is off.

2.1.2 Rear Panel Power Supply Slots & Fans

There are two slide-in power supply slots on the rear panel to accommodate the power supply modules, which are used to support redundant backup for the chassis. Both power modules can accept either 220VAC or -48VDC supply.

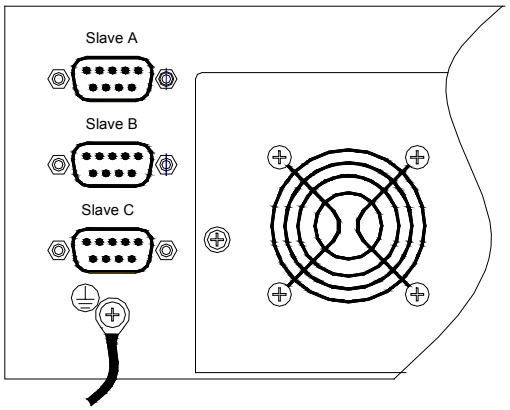




In addition to the power supply module, two removable / replaceable fans can be found on the rear panel, which are used to cool down the chassis.

2.1.3 Rear Panel Management Connectors

There are also three DB-9 connectors in the rear panel used to connect the master chassis and the slave chassis for network management communication. Straight through 9-pin DB9 male cable shall be used in this application. All three connectors are used on the master chassis, while only the top DB-9 connector is used for the slave chassis. The location for these connectors and numbering scheme can be found in the following drawing:



2.1.4 Physical and Environmental

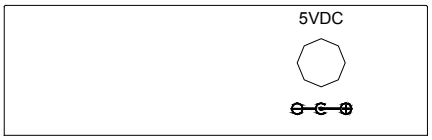
- Dimensions: 19-inch rack-mount width, 2.0U height.
- Weight: 9 Kg
- Operating temperature: 0□ ~ 65□
- Storage temperature: -25□ ~ 85□
- Humidity: 5% ~ 95% RH Non-condensing

2.2 Remote Converter Unit

The following drawing is the outline of the remote converter unit. The unit can be wall-mounted for use in special cases.

2.2.1 Rear Panel Connector

The remote converter unit supports 5V DC power supply options. The following figure shows the power connector on the rear panel.



2.2.2 Physical and Environmental

- Dimensions: 125×90×28mm
- Weight: 0.50Kg
- Operating temperature: 0□ ~ 65□
- Storage temperature: -25□ ~ 85□
- Humidity: 5% ~ 95% RH Non-condensing

2.3 Network Management Card

GMC200-NMC network management card (NMC) contents dual embedded processors to optimize the system performance. The 32-bit RISC

base processor is responsible for the network protocol processing, while the 16-bit instruction set MCU is used for the system house keeping, such as the communication, control and status gathering between the master and slave chassis, the local and remote converters. The embedded software on the NMC supports command line interface (CLI) based, Web-based and SNMP management options to meet your system management requirements at different levels.

The following table shows the LED descriptions.

Label	Type	Color	State	Description
PWR	Power status	Red	On	The converter is power on
			Off	The converter is power off
LNK/ACT	RJ45 Ethernet link status	Yellow	On	Valid communication link established at RJ45 port
			Blinking	Indicates network activity for the corresponding RJ45 port
SYS/ALM	Management software status and alarm	Green	On	Management software is in normal operational
			Blinking	Management system is booting up or the software upgrade is in progress or there is a software error alarm

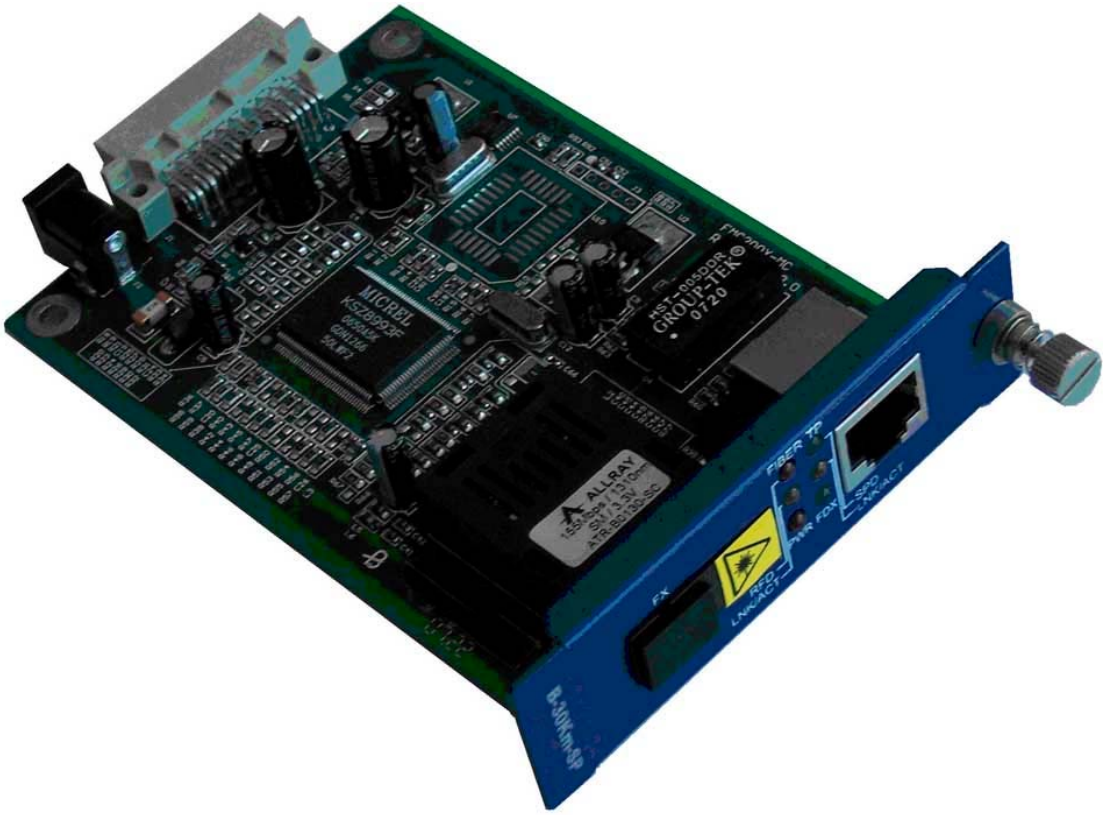
2.4 Plug-in Media Converter Cards

GMC200 system uses the same plug-in card in both carrier center chassis

and the remote converter unit. There are different kinds of plug-in converter cards for different applications, such as

- 10/100Base-TX to multi-mode 100 Base-FX converter card with or without IP ping function
- 10/100Base-TX to single mode dual fiber 100 Base-FX converter card with or without IP ping function
- 10/100Base-TX to single mode single fiber 100 Base-FX converter card with or without IP ping function
- Multi-mode 1000Base-SX to single mode 1000 Base-LX converter card without IP ping,
- 10/100/1000Base-TX to single mode single or dual fiber 1000 Base-LX converter card with or without IP ping.

The picture of a media converter card is shown below.



The following table summarizes the available plug-in media converter cards:

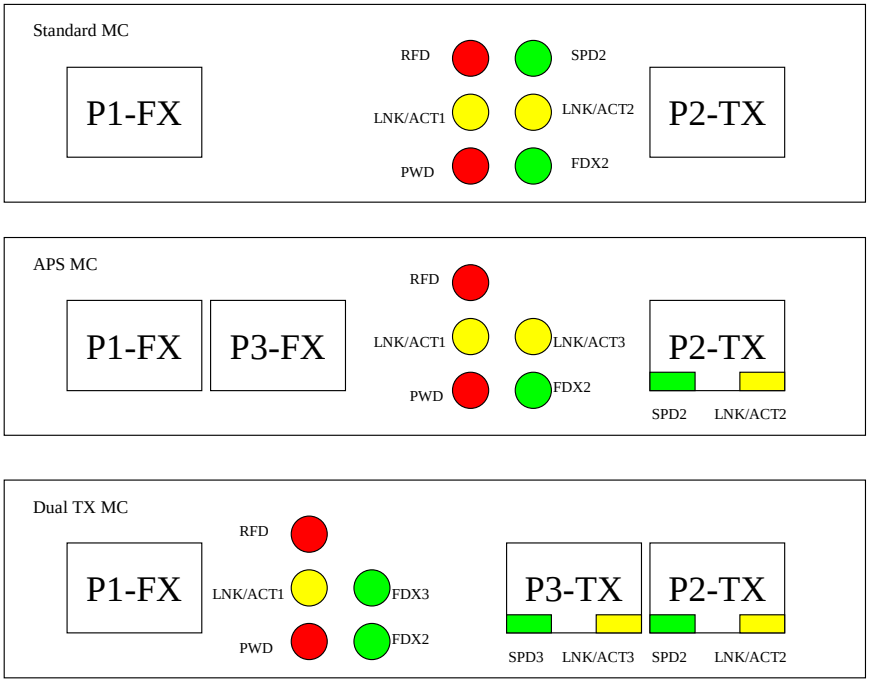
Card Type	Local Interface	WAN Interface	In-band OAM	IP Ping
GMC200C	1 x 10/100BT	1 x 100FX	Yes	No
GMC200C-P	1 x 10/100BT	1 x 100FX	Yes	Yes

2.4.1 LEDs on the plug-in 100Base-FX Converter Card

There are six diagnostic and status LEDs on the face panel of media converter card, which are used as the indications of power, optical and UTP ports. As mentioned before, the media converter plug-in card is hot swappable. The card also offers power down and up detection features (dying gasp), which will automatic send the power down or power up alarm to the network management system via in-band OAM frame, if the power supply voltage drops to dangerous level or comes back to normal level. The following table shows the LED descriptions.

Label	Type	Color	State	Description
PWR	Power status	Red	On	The converter is power on
			Off	The converter is power off
TP/SPD	Speed Indicator	Yellow	On	The converter is in 100BASE-TX mode
			Off	The converter is in 10BASE-TX mode
TP/FDX	Full-duplex/ half duplex Indicator	Yellow	On	The 10/100BASE-TX port is in full duplex mode
			Off	The 10/100BASE-TX port is in half duplex mode
RFD	Remote Failure Detection	Red	On	The RFD function is enabled
			Off	The RFD function is disabled
TP /LNK/ACT	Link status and Port activity	Green	On	Valid communication link established
			Blinking	Indicates network activity for the corresponding port
			Off	The link condition is poor or there is no connection to this port
Fiber LNK/ACT	Link status and Port activity	Green	On	Valid communication link established
			Blinking	Indicates network activity for the corresponding port
			Off	The link condition is poor or there is no connection to this port

The following figure shows the LED assignments for all available 100 Base-FX converter types.



2.4.2 100Base-FX Optical Port Specifications

The optical port specifications for the 100 Base-FX plug-in converter card at the central side are listed in the following table.

Transmission Distance (km)	Optical Output Power (dBm)	Receiving Sensitivity (dBm)	Optical Output Wavelength (nm)	Spectral Width (nm)
20	-14 ~ -7	-32	1550	< 4
30	-10 ~ -3	-33	1550	< 4
50	-8 ~ -3	-36	1550	< 1

The optical port specifications for the 100 Base-FX plug-in converter card at the remote side are listed in the following table.

Transmission Distance (km)	Optical Output Power (dBm)	Receiving Sensitivity (dBm)	Optical Output Wavelength (nm)	Spectral Width (nm)
20	-14 ~ -7	-32	1310	< 4
30	-10 ~ -3	-33	1310	< 4
50	-5 ~ 0	-36	1310	< 4

2.4.3 1000Base-X Optical Port Specifications

As the SFP module is used in the 1000Base-X media converter cards, regarding the 1000Base-X optical port specifications, please refer to the datasheet of the SFP module used.

3 Web-based Management

The Web-based management interface is one of many tools specifically designed to assist the network manager in creating complex standalone or network configurations.

This guide describes how to use the Web-based management interface to configure and maintain your GMC200 media converter system. It is intended for network managers who are responsible for configuring the system. This guide assumes prior knowledge and understanding of the terminology, theories, and practices and specific knowledge about the networking devices, protocols, and interfaces that comprise your network.

You should have working knowledge of the Microsoft* Windows* operating system, graphical user interfaces (GUIs), and Web browsers.

GMC200 provides the default network settings for the Web browsers as follows. It offers three different login privileges: superuser, admin and guest. You can change the following parameters at any time after you have successful logged into the system.

- IP Address: 192.168.223.100
- Subnet Mask: 255.255.248.0
- Default Gateway: 192.168.223.254

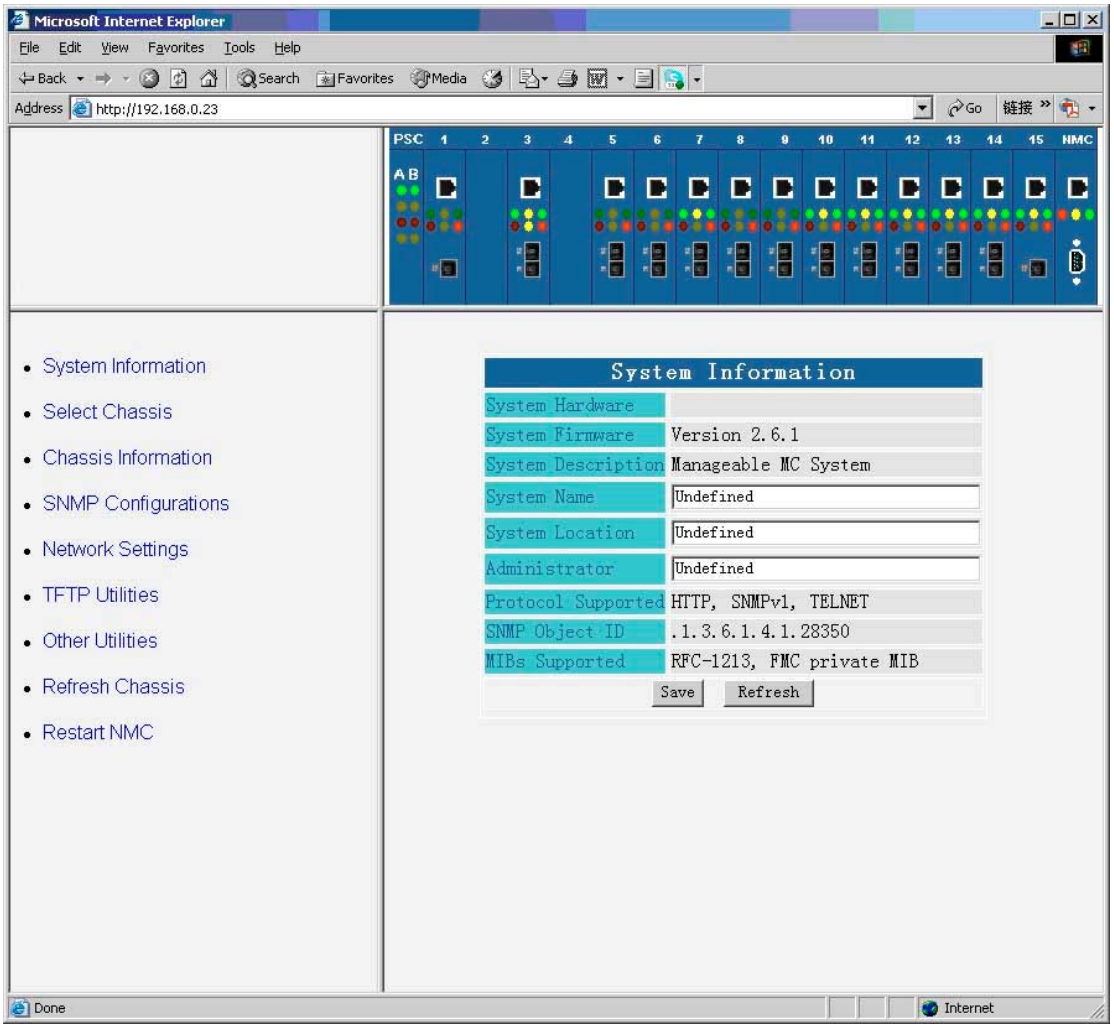
- User Name: superuser
- Password: 1235678

- User Name: admin
- Password: 123

- User Name: guest
- Password: 123

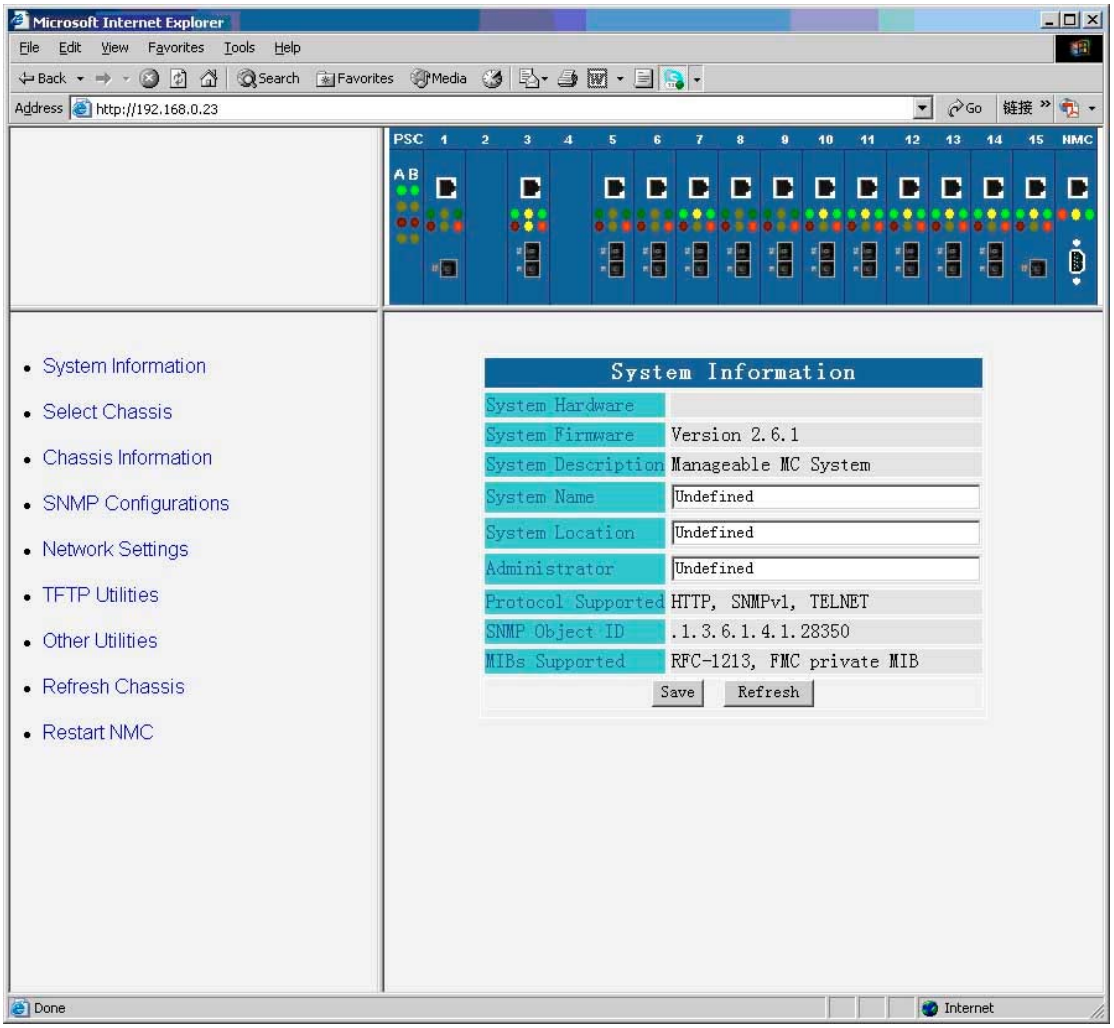
You can browse http://192.168.223.100, type user name and password as above, if you have not made any change to the network setting.

After you type the correct user name and password in the window shown above, you will see the following homepage for the system. It is important to note that GMC200 management system will not automatic log out even if the webpage stays inactive for a period of time. You shall close the page if you think it is necessary.



3.1 System Information

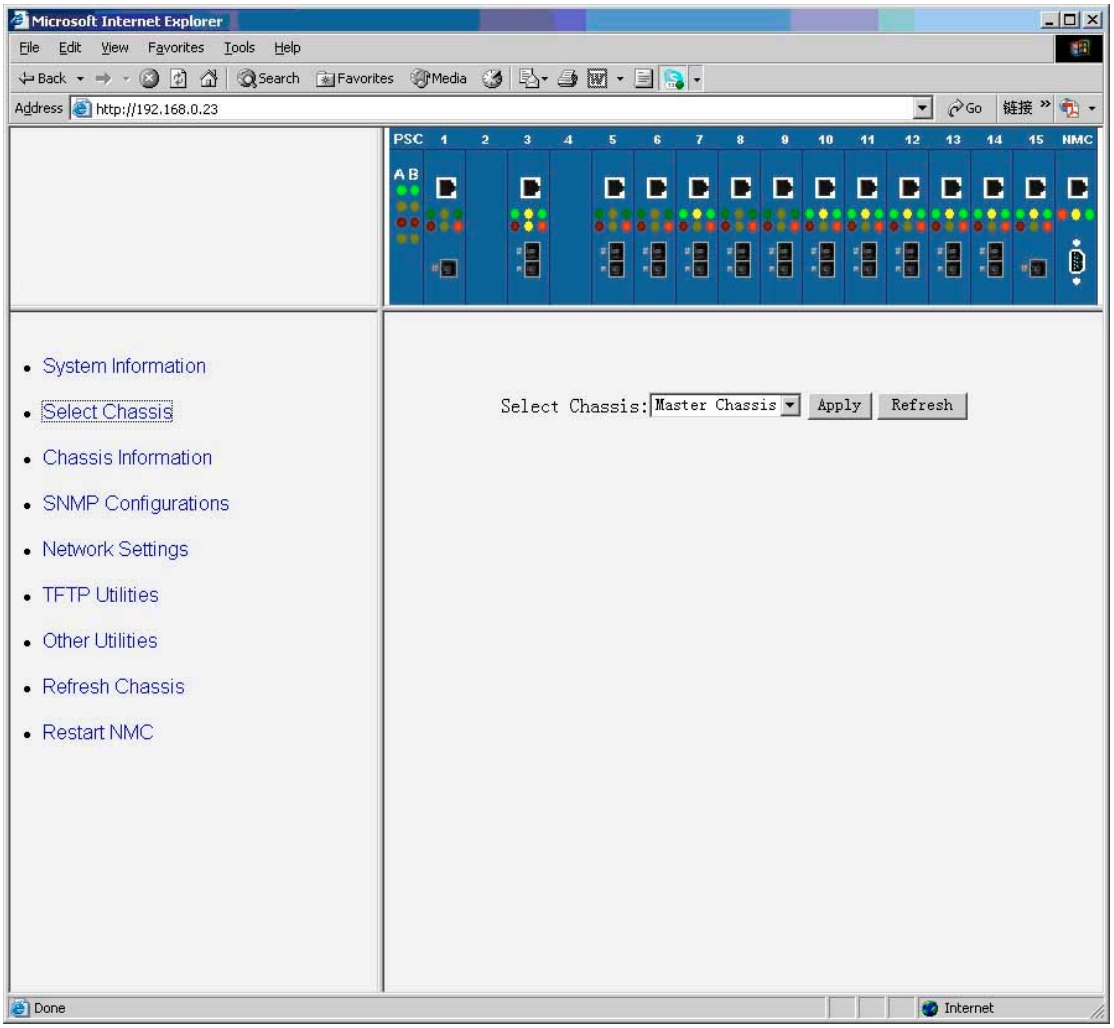
The system information page allows you to add the system name, location and the system administrator contact information to management data base. The information gives the network administrator a simple way to trace and manage the systems in the field.



3.2 Select Chassis

As a single GMC200 network management unit can manage up to 4 chassis, you shall select a chassis to be managed and monitored prior to any operation. The following figure shows that all the four chassis are connected and are powered. Here the “master” refers to the chassis with RJ45 and DB9 connecter on the front panel of the network management card, which is connected to the management terminal via Ethernet connection. While the “slave1”, “slave2” and “slave3” are the chassis connected via the DB9 cable on the rear panel of the master chassis.

It is important to note that if a slave chassis is not connected or power off, it will not appear on the selection tab as shown in the following figure.



3.3 Chassis Information

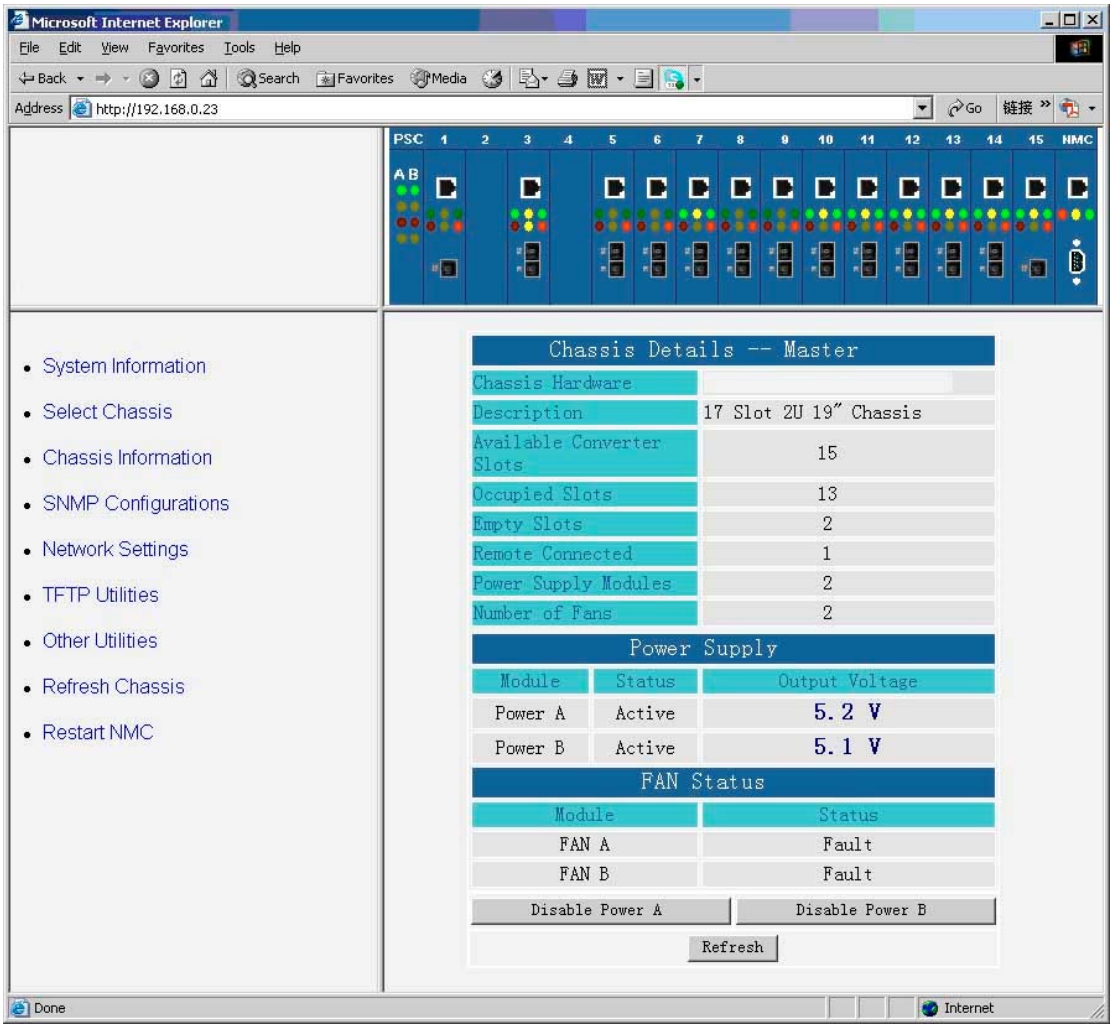
There are four functional items under the “Chassis Information” tab. They are:

- Chassis Details
- Converter Location, and
- Converter Details.

You can display all the chassis related information and configure the local and remote converter parameters here.

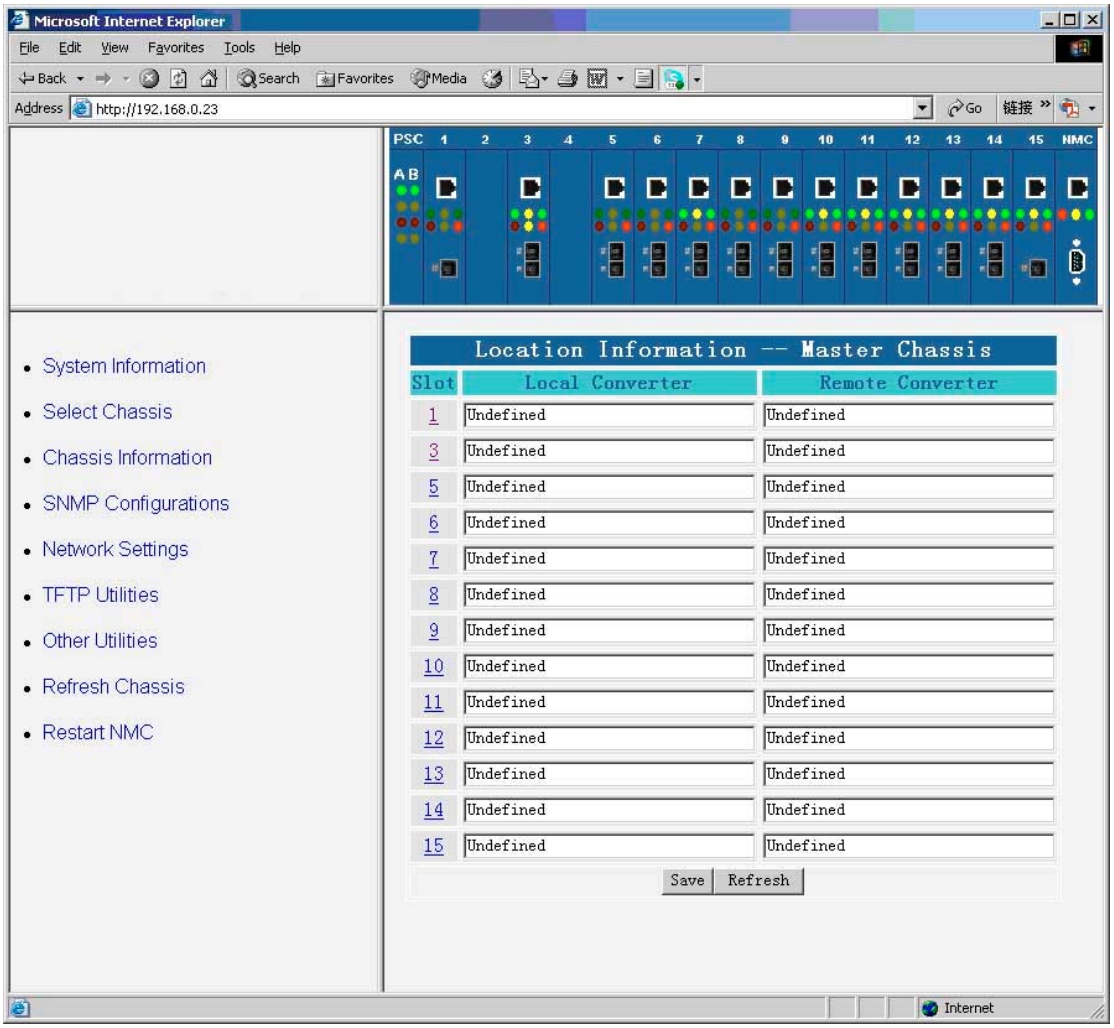
3.3.1 Chassis Details

The chassis detail information will be shown as below after you click the web page “Chassis Details” under the “Chassis Information” tab. The chassis details page will show all the basic information for the selected chassis, such as the slot occupancies, power supply and fan conditions.



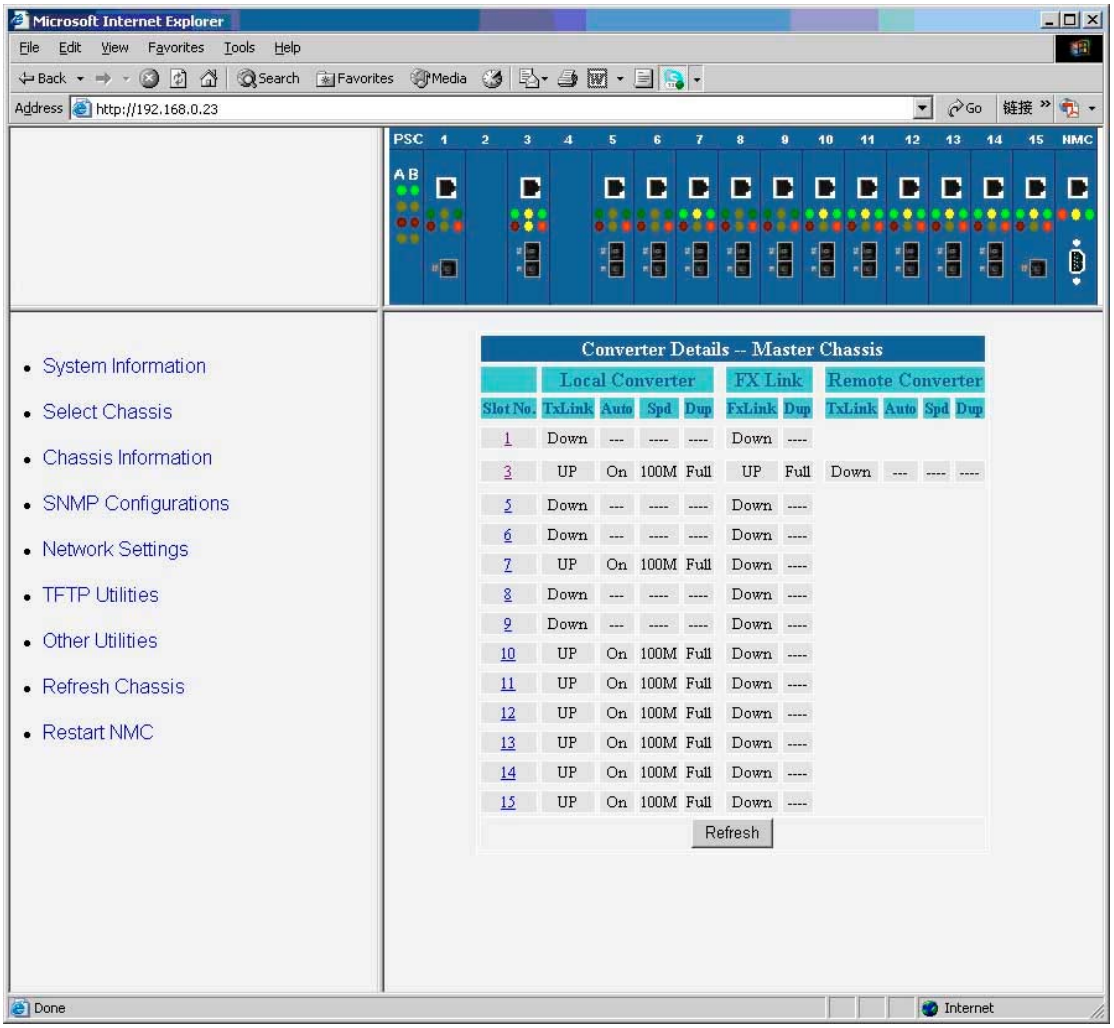
3.3.2 Converter Location

The local and remote converter locations can be defined in the following web page. The information could be used to identify the converter. You can put the customers name or location here.



3.3.3 Converter Details

The following screen capture shows the port status for the selected chassis. The management software will only show the slot status with a plug-in in it. If the remote converter is not connected or powered off, its status will not show on the page. Each number in the “Slot No.” column is linked to the converter status, configuration and control page.

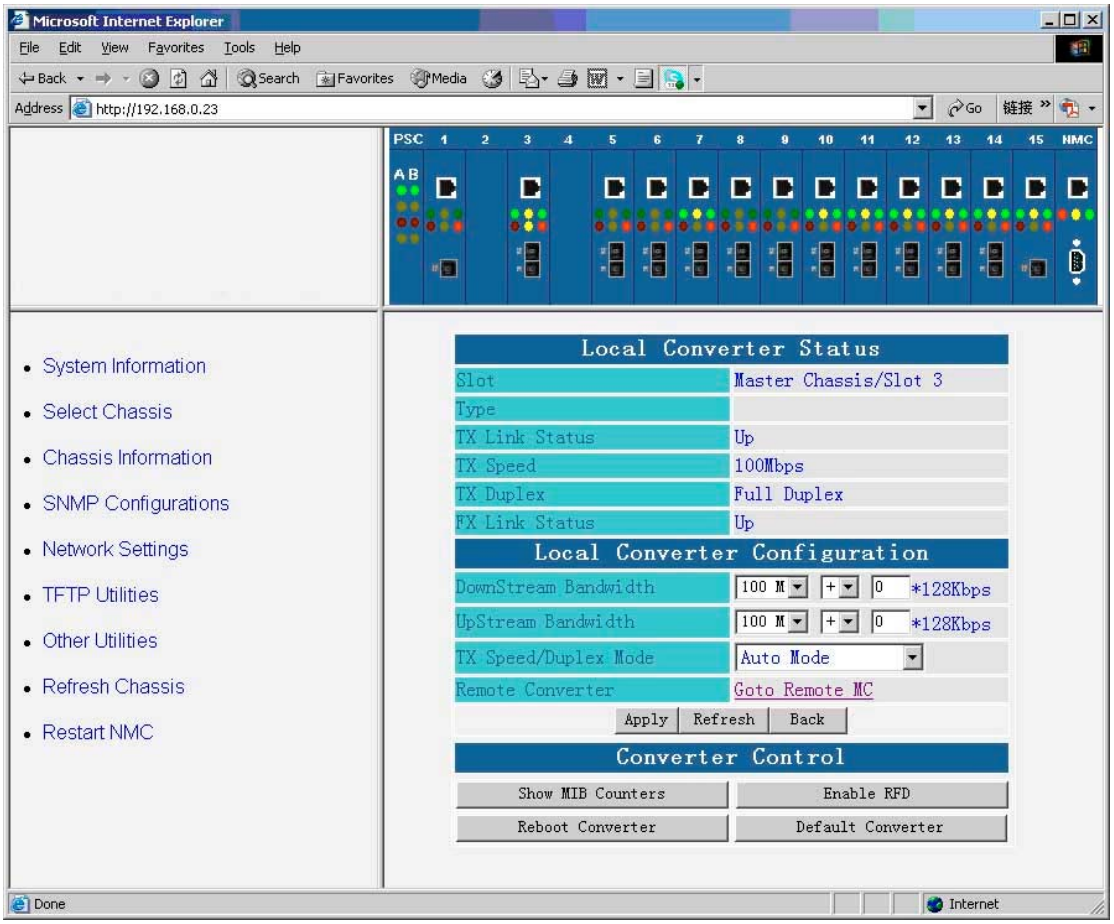

Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://192.168.0.23
Go
PSC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 NMC
A B
System Information
Select Chassis
Chassis Information
SNMP Configurations
Network Settings
TFTP Utilities
Other Utilities
Refresh Chassis
Restart NMC
Converter Details -- Master Chassis
Local Converter
FX Link
Remote Converter
Slot No. TxLink Auto Spd Dup FxLink Dup TxLink Auto Spd Dup
1 Down --- ---- ---- Down ----
3 UP On 100M Full UP Full Down --- ---- ----
5 Down --- ---- ---- Down ----
6 Down --- ---- ---- Down ----
7 UP On 100M Full Down ----
8 Down --- ---- ---- Down ----
9 Down --- ---- ---- Down ----
10 UP On 100M Full Down ----
11 UP On 100M Full Down ----
12 UP On 100M Full Down ----
13 UP On 100M Full Down ----
14 UP On 100M Full Down ----
15 UP On 100M Full Down ----
Refresh
Done
Internet

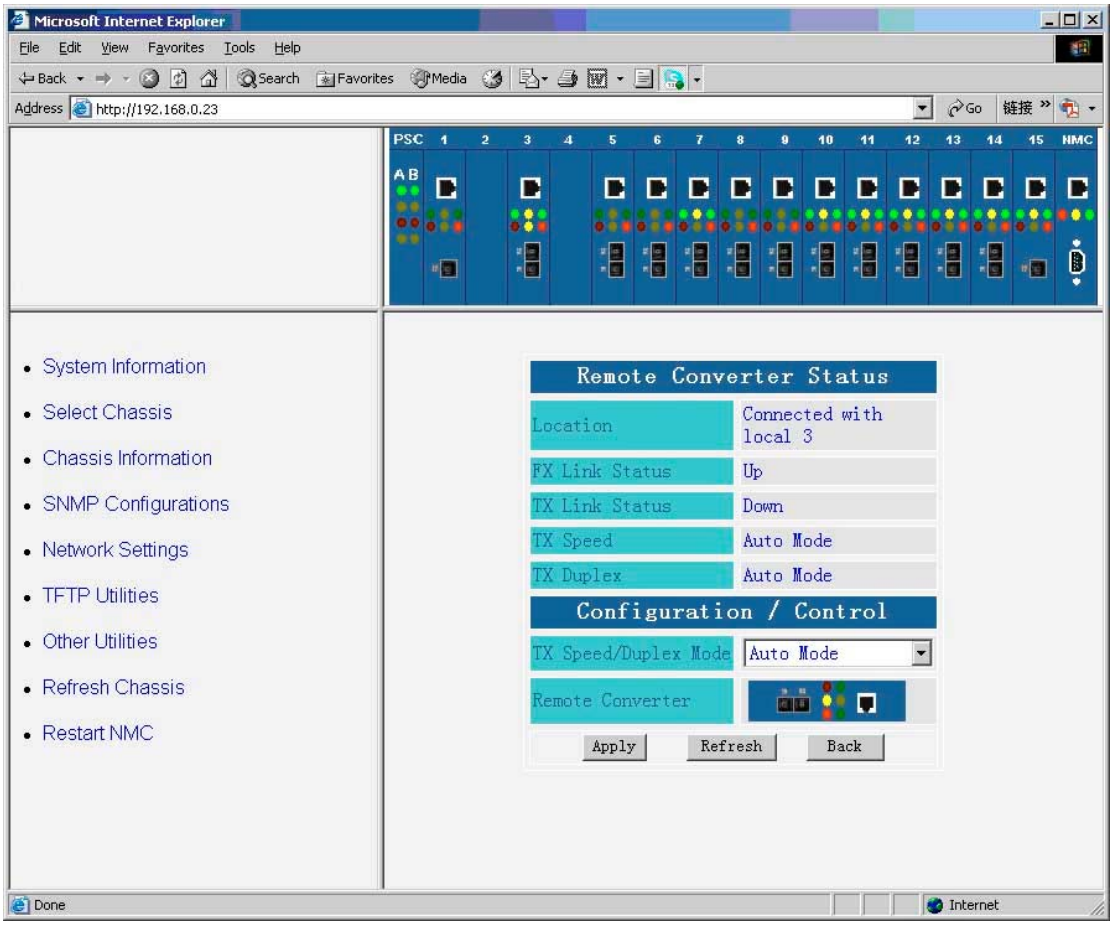
3.3.4 Converter Status and Configuration

You can browse the converter status and configuration page either by clicking the number shown in the “Slot No.” column of “Converter Details” page as above, or direct clicking the converter shown in the chassis graphic. The following screen capture shows the local and remote converters’ detail and configuration items, respectively. You can also browse to the “Remote Converter Detail” page by clicking the “Goto Remote MC” link on the “Converter Detail” page. The followings are the control tabs used on these two pages.

- Upstream / Downstream Bandwidth: You can enable the rate control at 128 Kbps step on both directions. The valid range is 0 ~ 100M. When the number is set to 100M, the bandwidth limitation function will be disabled.
- Tx Speed / Duplex Mode: Allows you to choose between auto-negotiation, 100Mbps or 10Mbps and half or full duplex modes. When Auto-mode is selected, auto negotiation is enabled, the link speed and duplex mode will be automatic set based on the link condition to offer the highest link performance for the system.

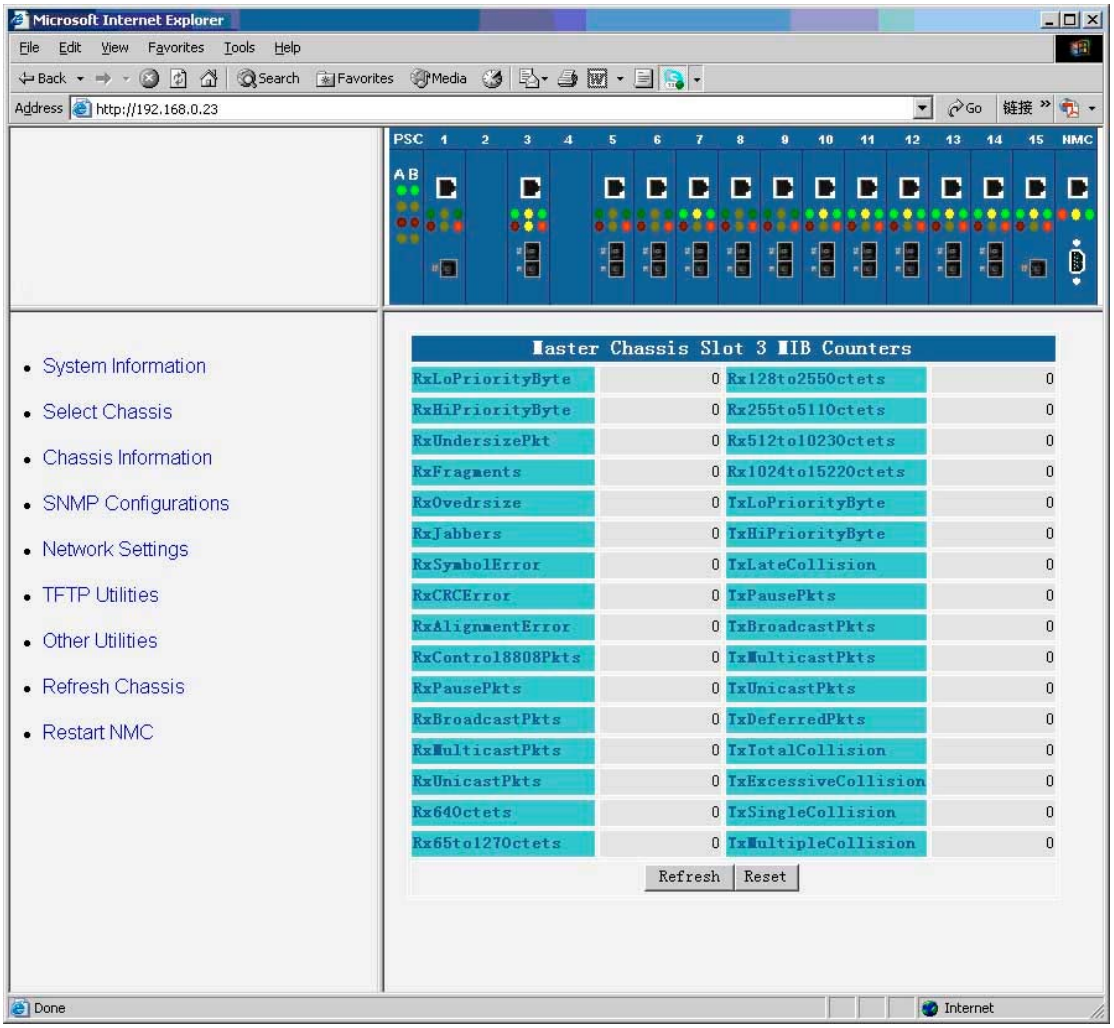
- Reboot Converter: When you click the “Reboot Converter” button, both the local and remote converters will perform software reset, but all the configurations will be kept.
- Default Converter: When you click the “Default Converter” button, both the local and remote converters will be reconfigured back to the factory default.
- Show MIB Counters: Display the content of 32 MIB counters.
- Remote Fault Detection (RFD): The feature allows the remote converter to show the local converter’s status on its LEDs, or vice versa. If the RFD is enabled, the remote converter’s TX port LEDs and transmitter will turn off when the local TX port is down, or the local converter’s TX port LEDs and transmitter will turn off when the remote TX port is down.





3.3.5 MIB Counters

You can show the converter MIB counters by clicking the web page button of “Show MIB Counters” under the “Local Converter Control” tab. The total of 32 MIB counters will be shown as following web page. All the MIB counters are 32 bits wide, they will overflow in a period of time.



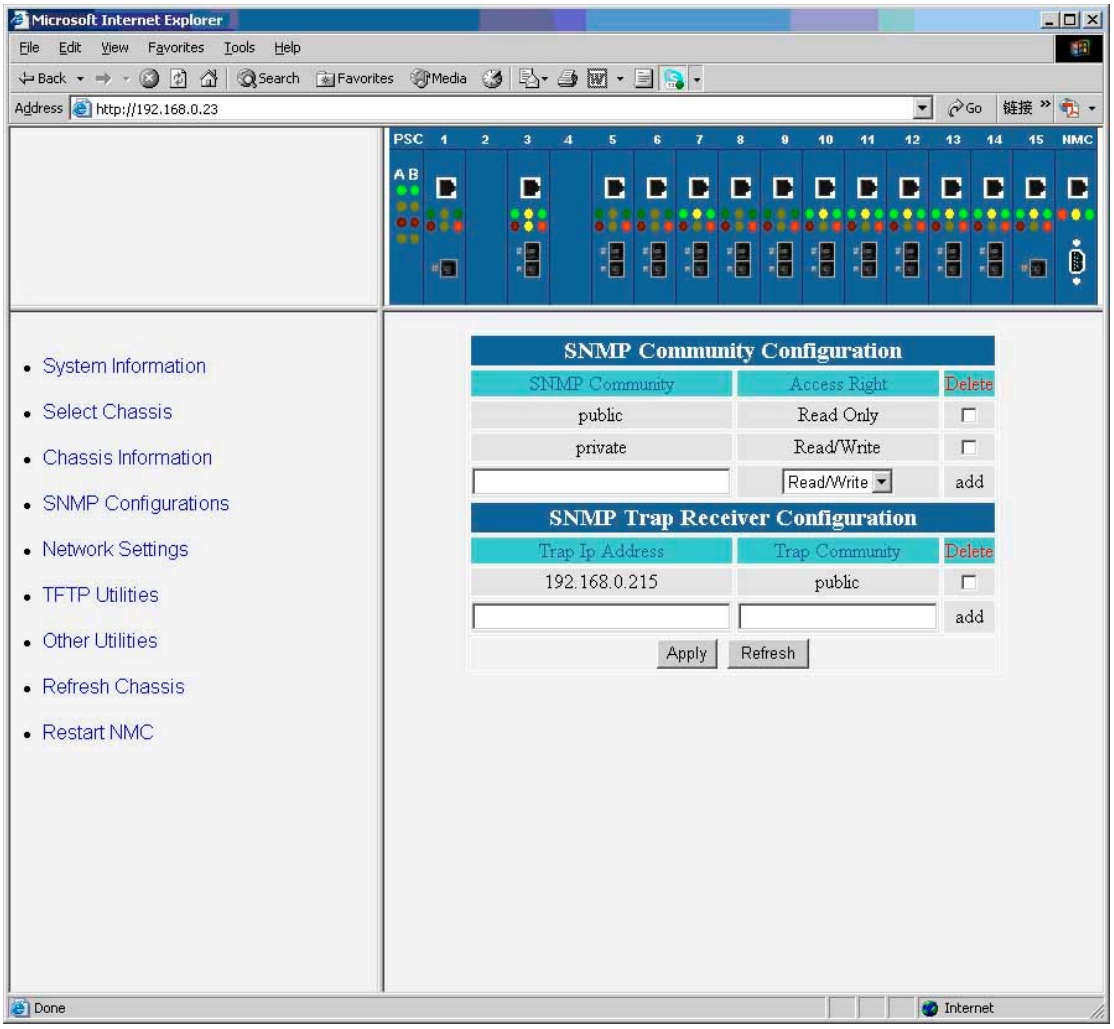
3.4 SNMP Configurations

Simple Network Management Protocol (SNMP) is the standard for network management that uses a common software agent to manage local and wide area network equipment from different vendors; part of the Transmission Control Protocol/Internet Protocol (TCP/IP) suite and defined in RFC1157. SNMPv1 is version one, or the original standard protocol. GMC200 management system supports SNMPv1.

You can configure SNMPv1 read/write and read-only community strings, enable or disable trap mode settings.

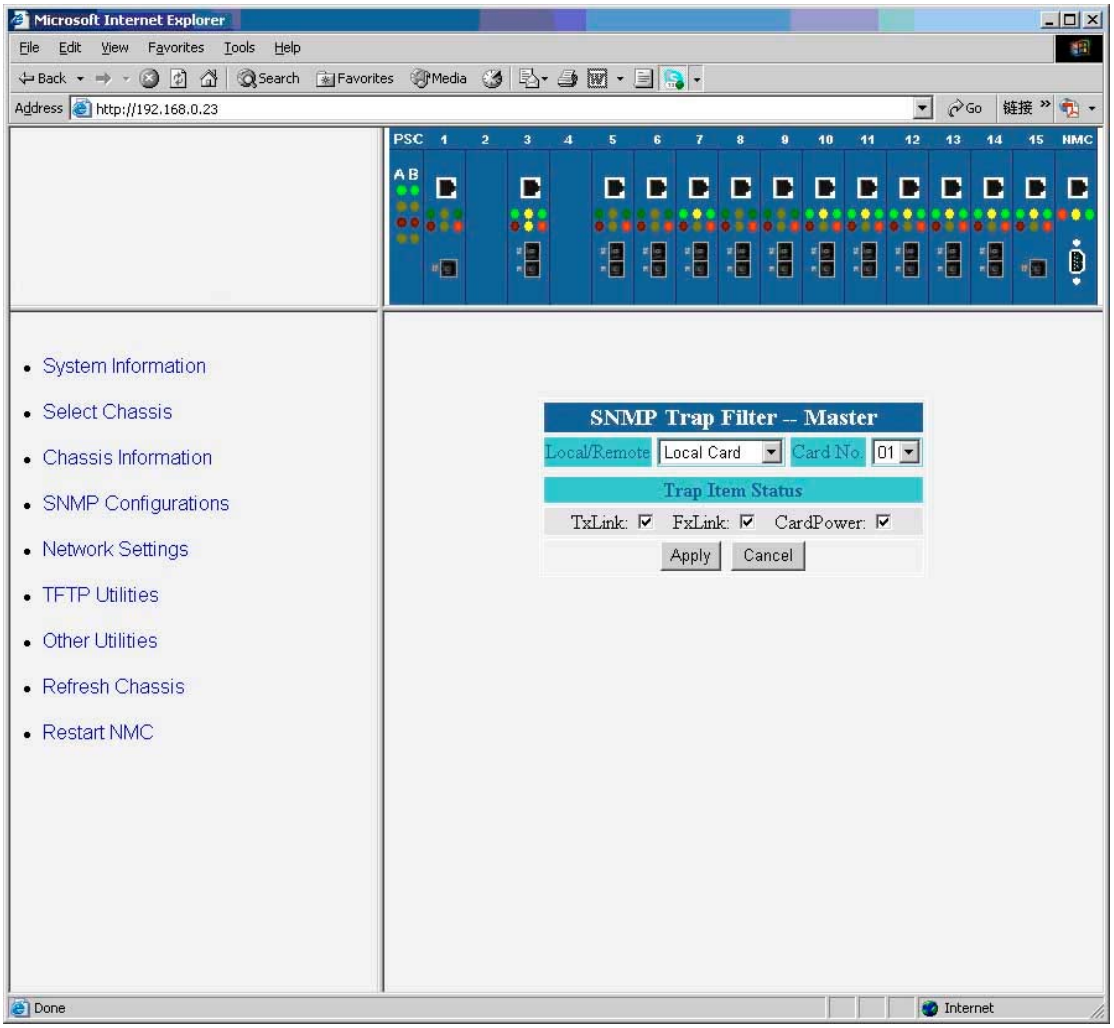
3.4.1 SNMP Configurations

The configuration of the SNMP community string and trap mode can be shown by clicking “Community Configuration” under the “SNMP Configurations” page as captured below. You can configure the IP address and community string for a new SNMP trap receiver, view a table of existing SNMP trap receiver configurations, or delete an existing SNMP trap receiver configuration(s).



3.4.2 SNMP Trap Configuration

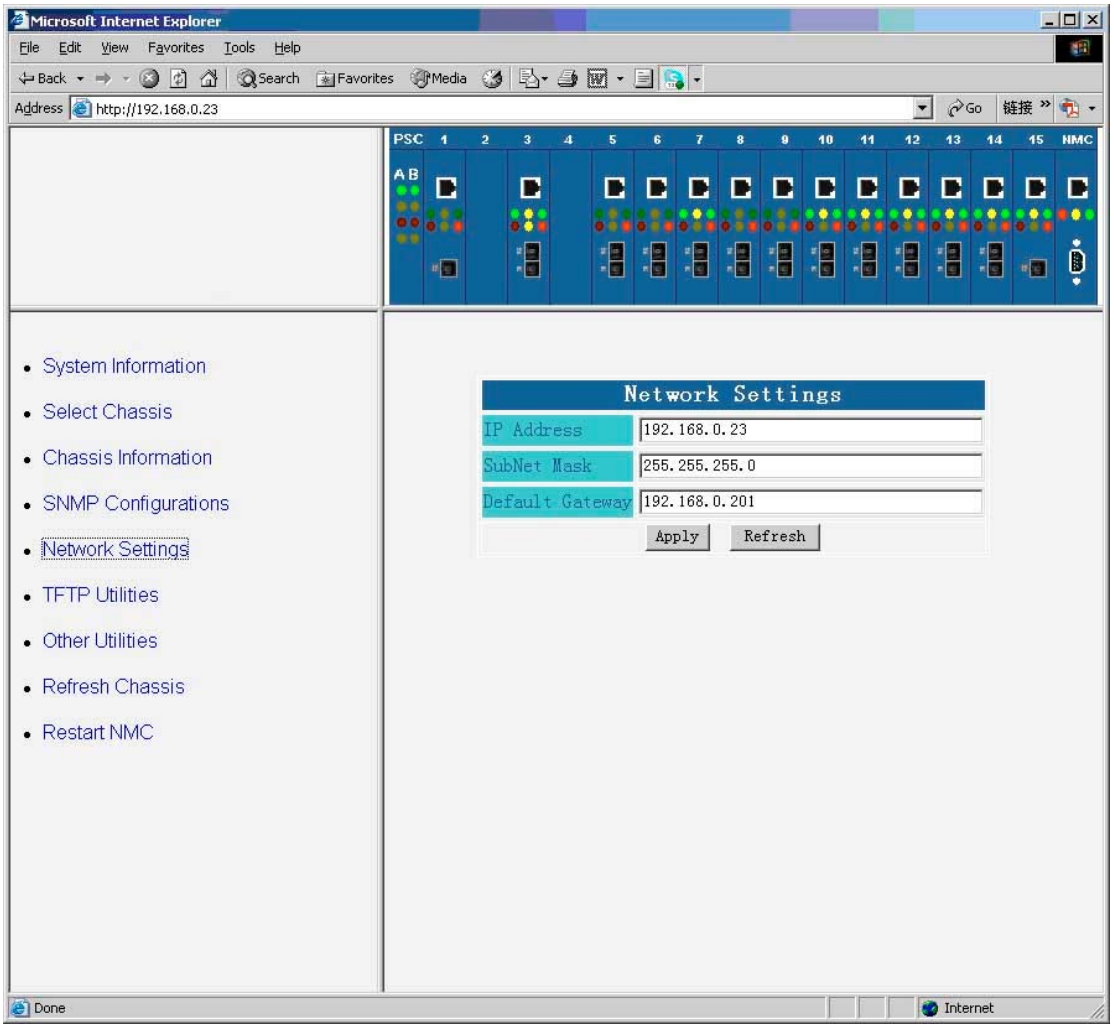
To create SNMP traps, you should open the “Trap Configuration” page under the “SNMP Configurations” as shown below. First you need to select where the traps come from, then you can select the trap item status, including link up and down status and/or power on and off status.



3.5 Network Settings

If you want to manage and monitor the GMC200 media converter system remotely, you must have a proper network setting for the system, which include the IP address, subnet mask and default gateway as shown in the following figure. After you have changed the network settings, you shall restart the chassis in order to bring the new setting into effect.

The network setting for the system can be changed back to the factory default by pressing and holding the reset button on the face plat of the network management card for more than 5 seconds.



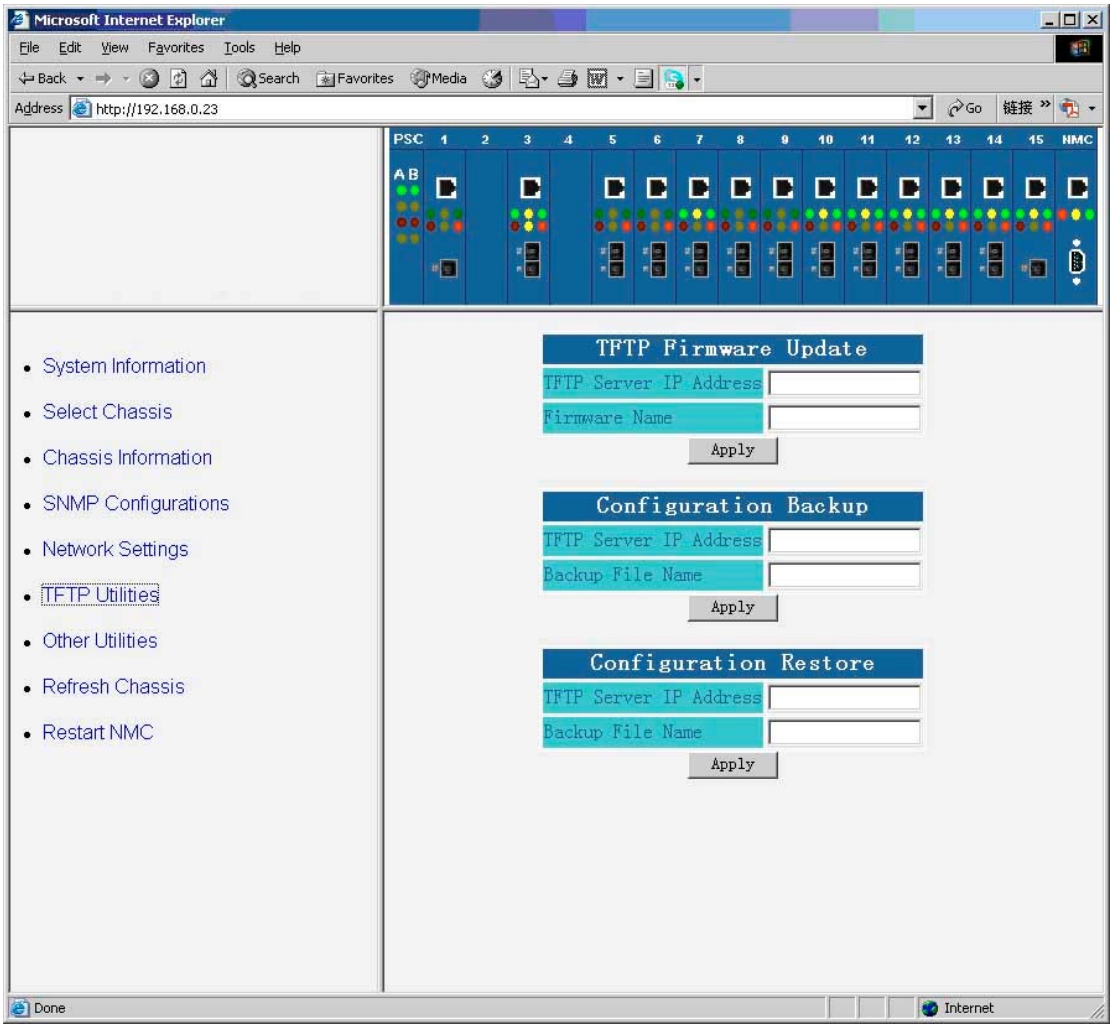
3.6 TFTP Utilities

GMC200 media converter system provides TFTP utilities for remotely updating the system firmware, system configuration backup and restore.

The whole system setup and configuration information can be backup to a data file and then restore back to the system. This feature is helpful for the system administrator to keep track the network information in a safe place, and to speed up the system recover from hardware failure.

The system firmware upgrade utility is only shown when you login as superuser.

The available TFTP utilities are shown in the following web page capture.



3.7 Other Utilities

The other utilities menu includes four items:

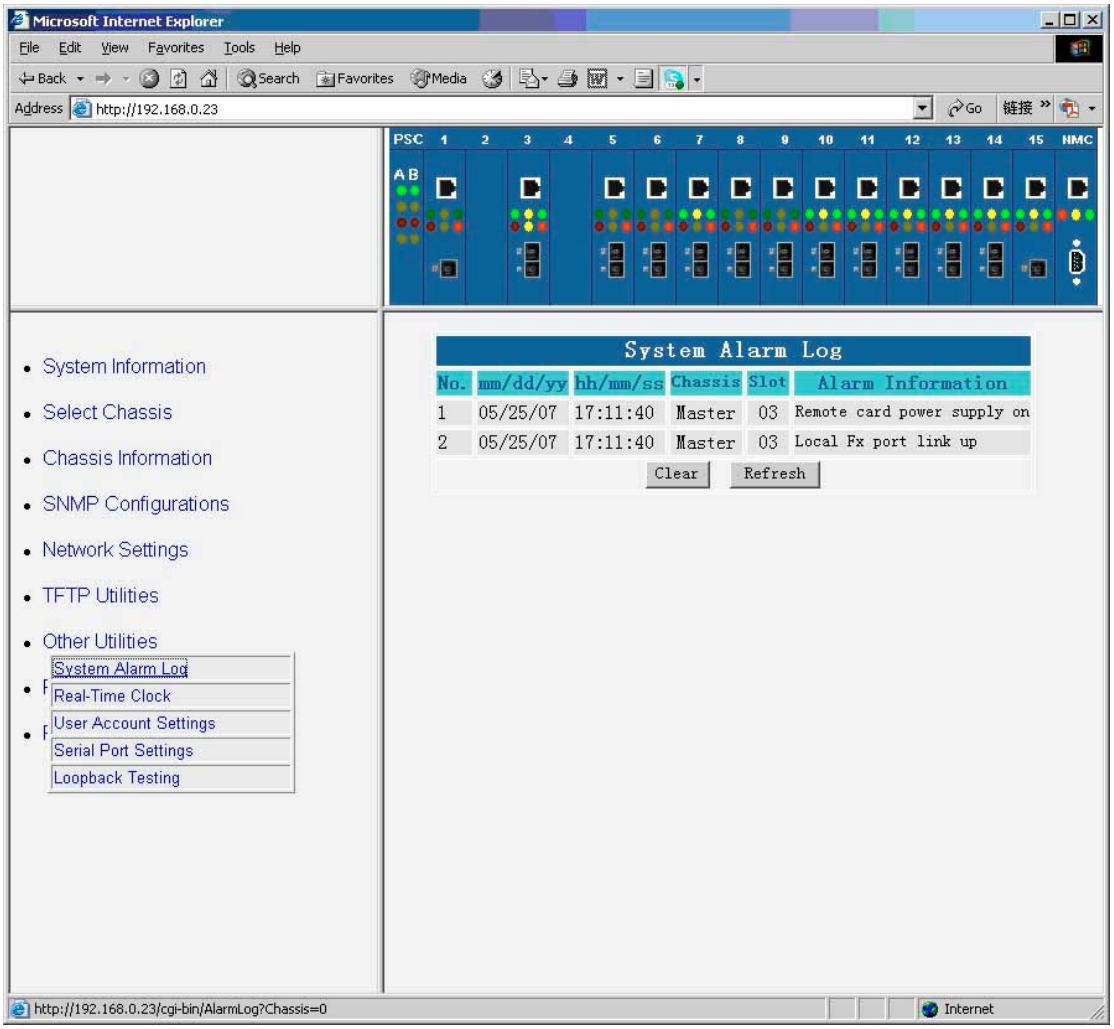
- System alarm log,
- Real-Time clock,
- User account settings,
- Serial port settings, and
- Loopback test.

3.7.1 Alarm

The logged alarms can be shown by clicking “System Alarm Log” under the “Other Utilities”. The alarms include any change on the local and remote converters, such as link up and down, power on and off. The logged information contents the date and time stamps, the location and other related attributes. You can delete all the logged alarm by clicking “Clear” button on the page. The sample alarms are captured in the following figure.

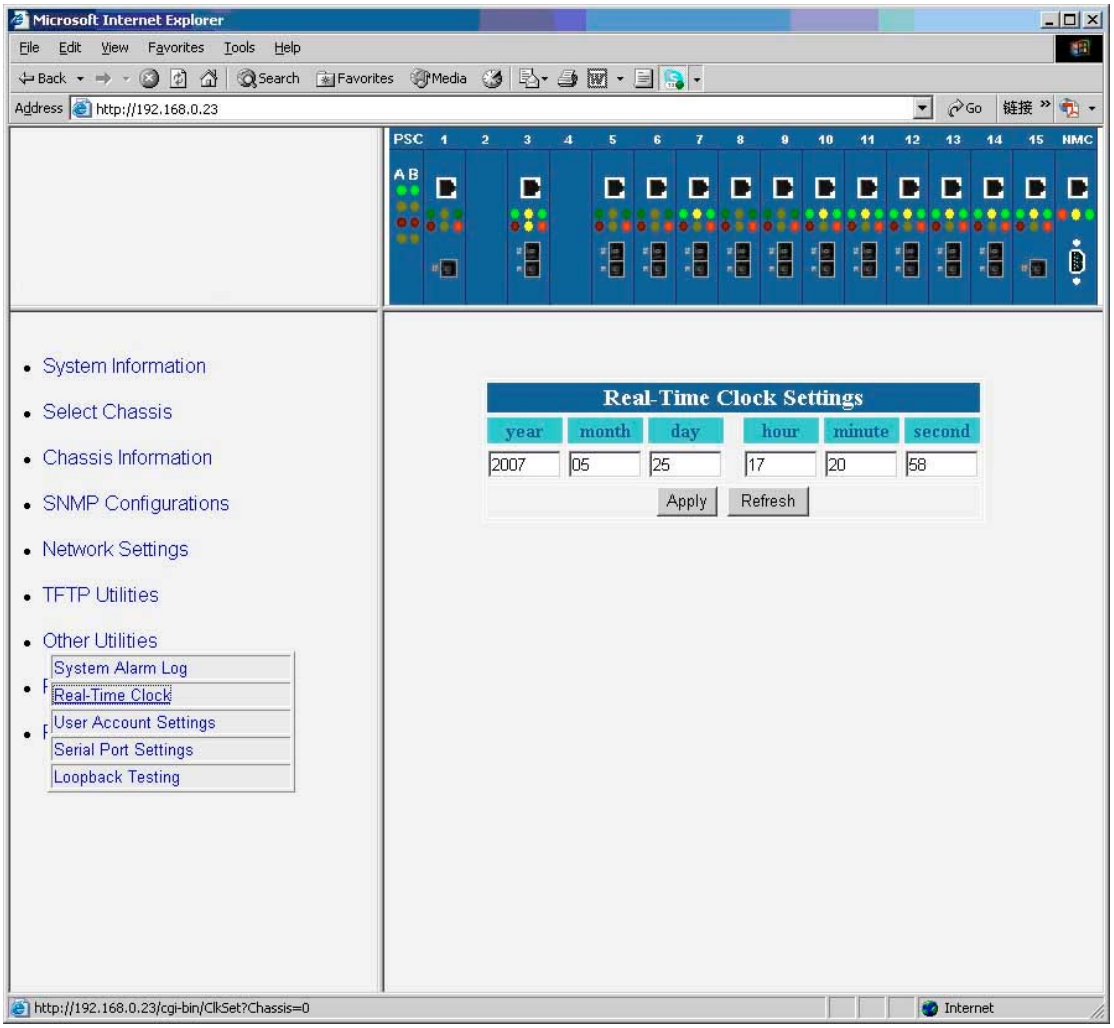
It is important to note that the system keeps the most recent 200 alarm

records, if you have not cleaned up the alarm log for a long period of time, the previous alarms will be over-written by the new one.



3.7.2 Real-Time Clock

You can show and modify the real-time clock setting by clicking the “Real-Time Clock” under the “Other Utilities”. During the alarm logging procedure, the date and time reading from the real-time clock will be used to help trace up the alarm events. Please set the date and time correctly.



3.7.3 User Account Settings

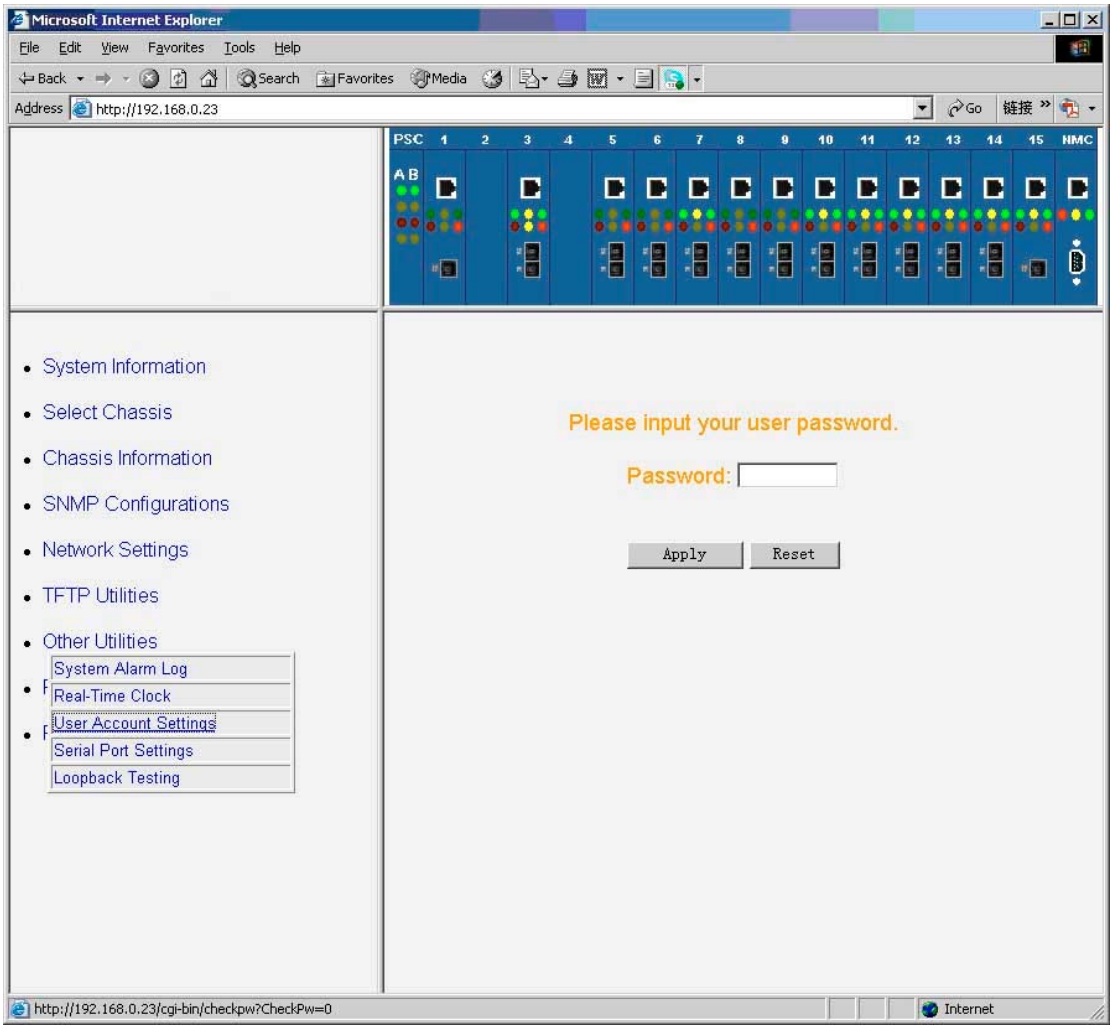
The user account settings page provides you a facility to change the user names and passwords. The total of user accounts available are three, the followings are the default settings:

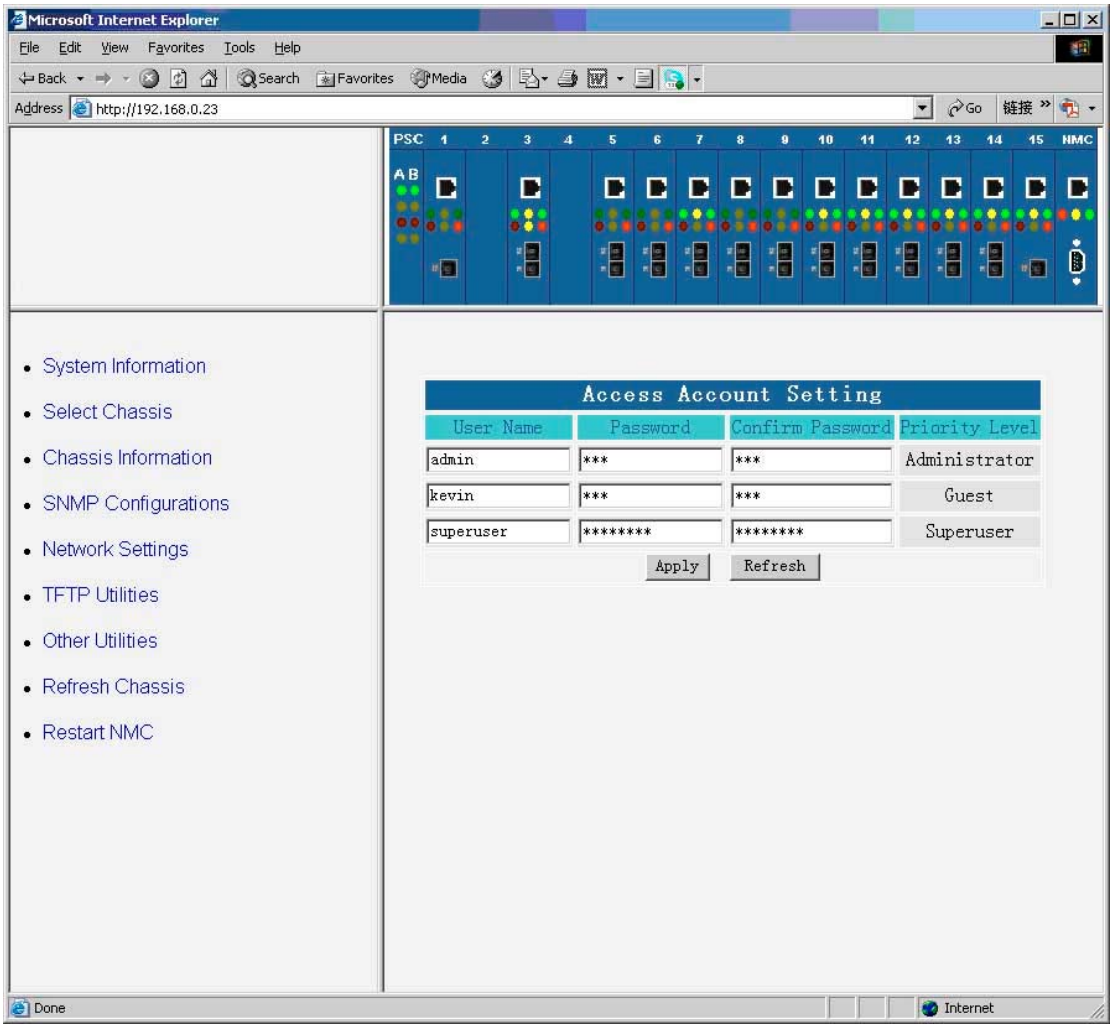
1. "**superuser**" with default password of "**12345678**". This login account will have all the privilege to change and setup the system parameters, including the system firmware upgrade.
2. "**admin**" with default password of "**123**". This login account will have all the privilege to change and setup the system parameters, except the system firmware upgrade.
3. "**guest**" with default password of "**123**" ". This login account will not have the privilege to change and setup the system parameters.

It is highly recommended that you should change the password immediately when the system is in the field and carries the data traffic, and keep the password in a safe place.

If you somehow forget the password, you can change them back to the

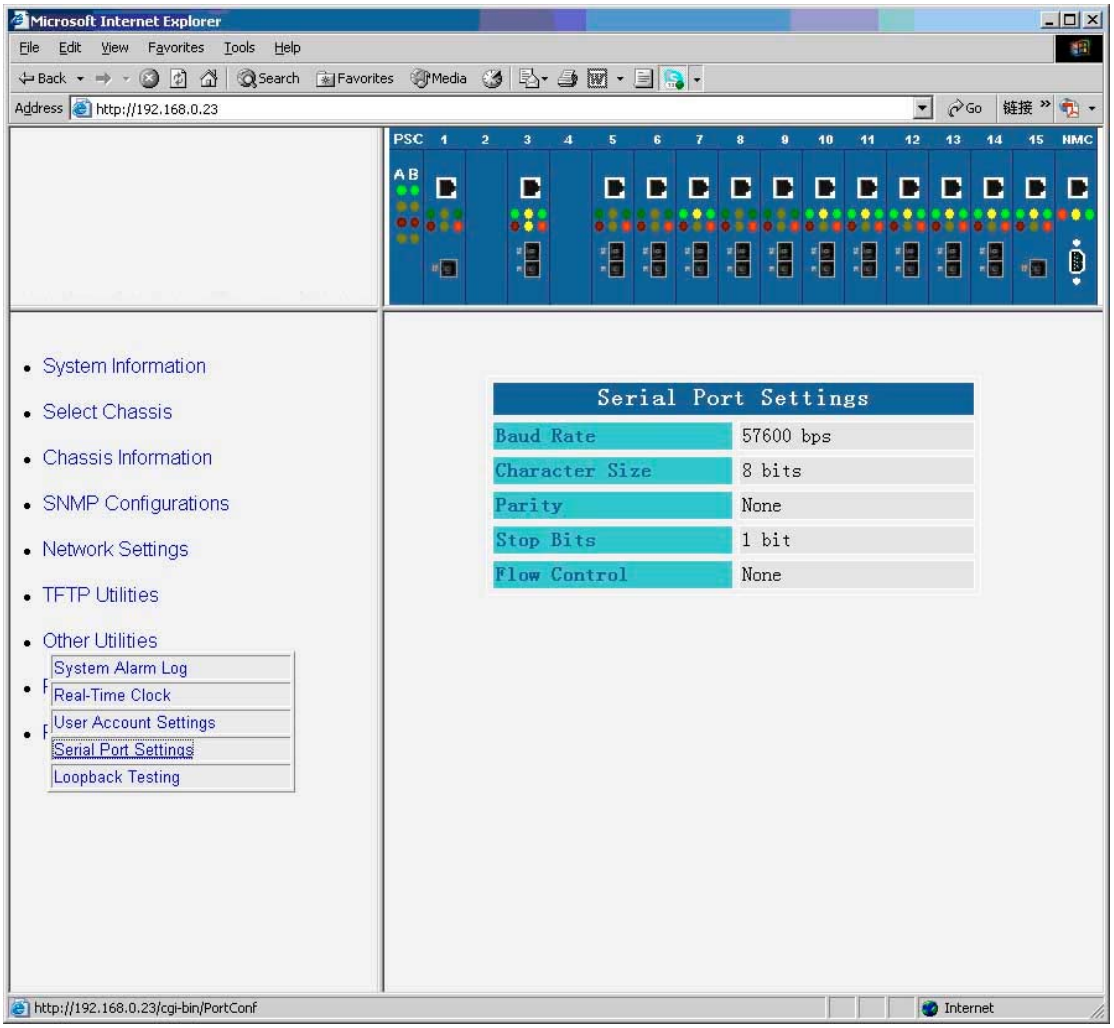
factory default by pressing and holding the reset button on the face plat of the network management card for more than 5 seconds.





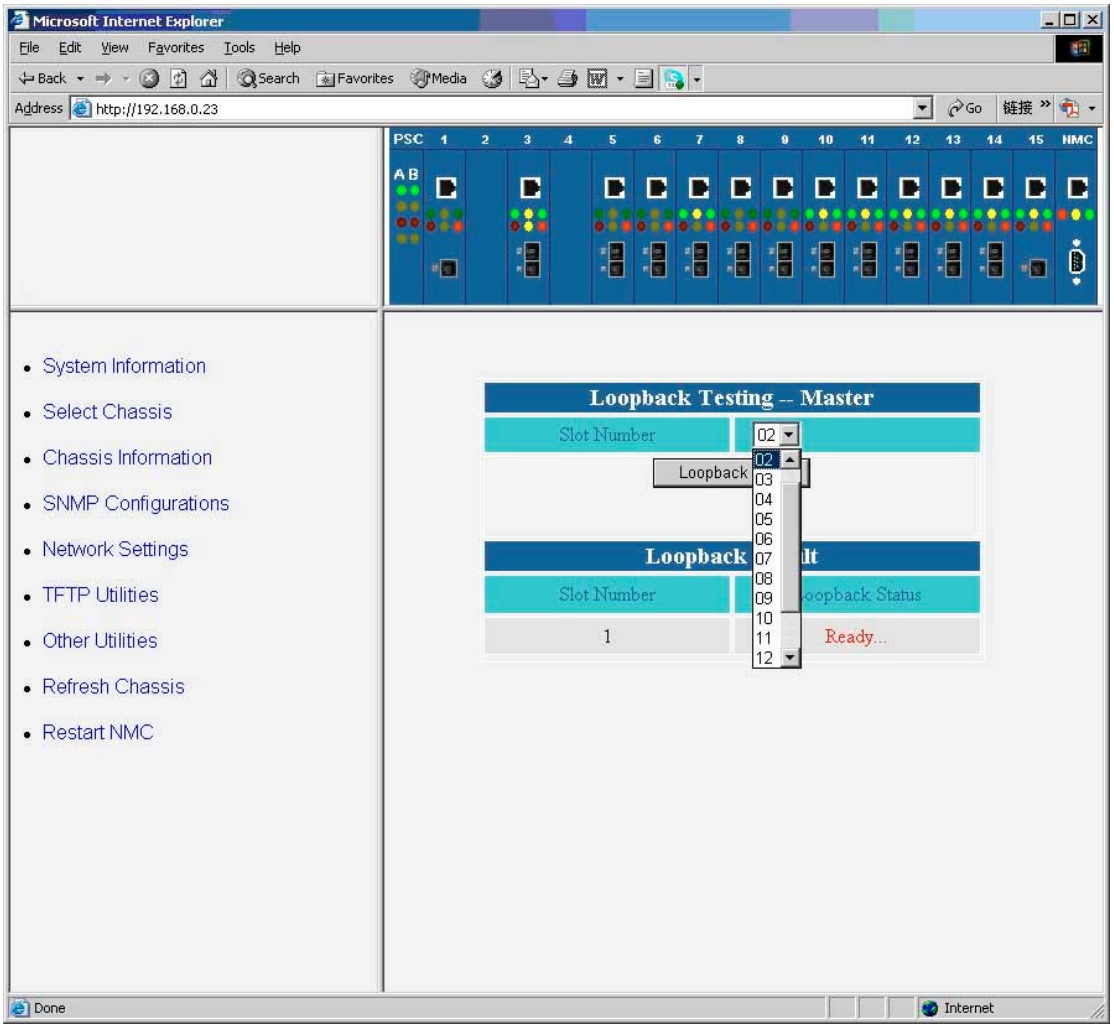
3.7.4 Serial Port Settings

You can show the following serial port setting by clicking the “Serial Port Settings” under the “Other Utilities”.



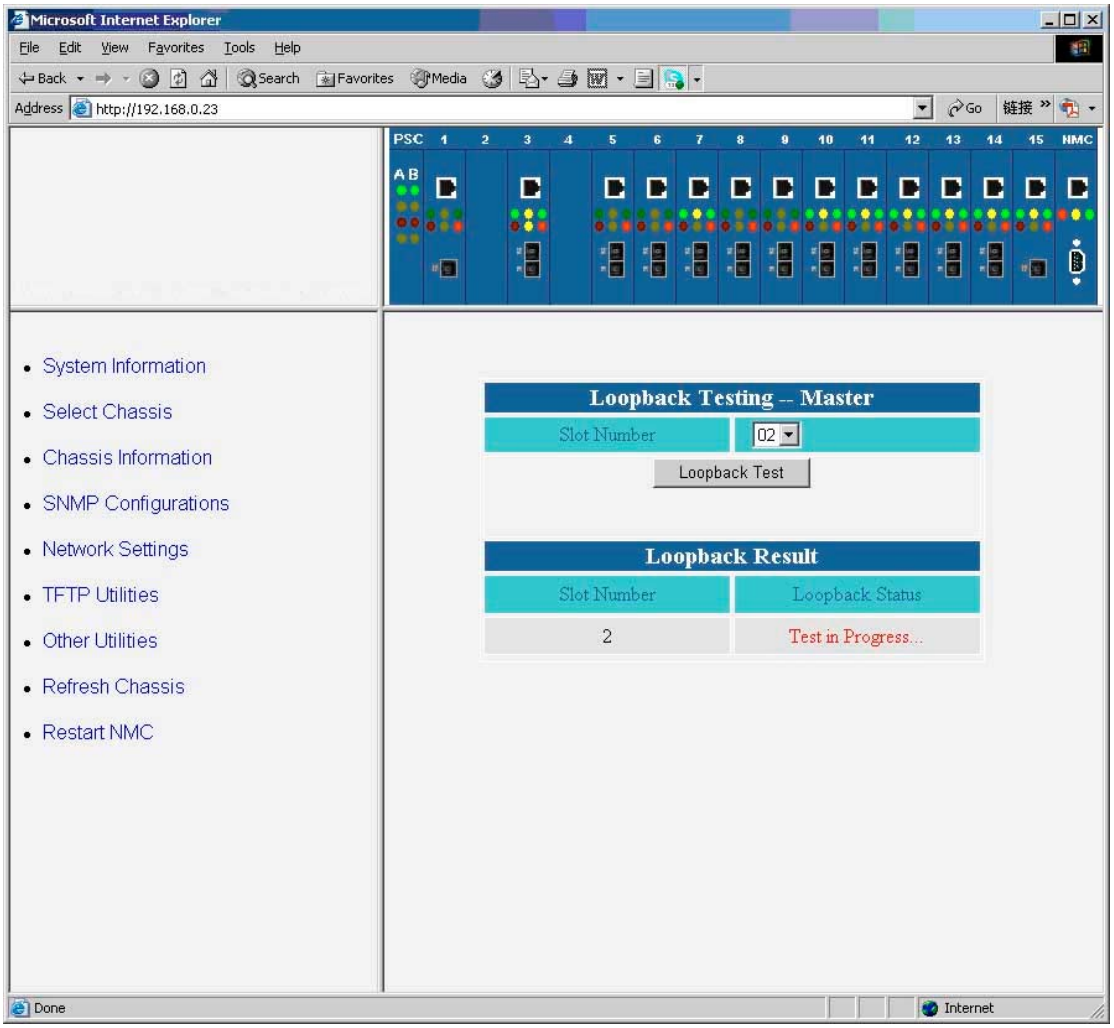
3.7.5 Loopback Testing

You can show the loopback test page by clicking the “Loopback Testing” under the “Other Utilities”. If you click the “Apply” button on the “Loopback Testing” page, the local converter will automatically send out 100 loopback frames to the remote converter and then check if the loopback frames are successfully looping back. If there is no CRC error for all the loopback frames and the frame number is the same as what it is sent, “Pass” will be shown as the “Loopback Status”. The loopback test will interrupt the normal traffic path, it will recover the normal traffic path after the loopback has completed.

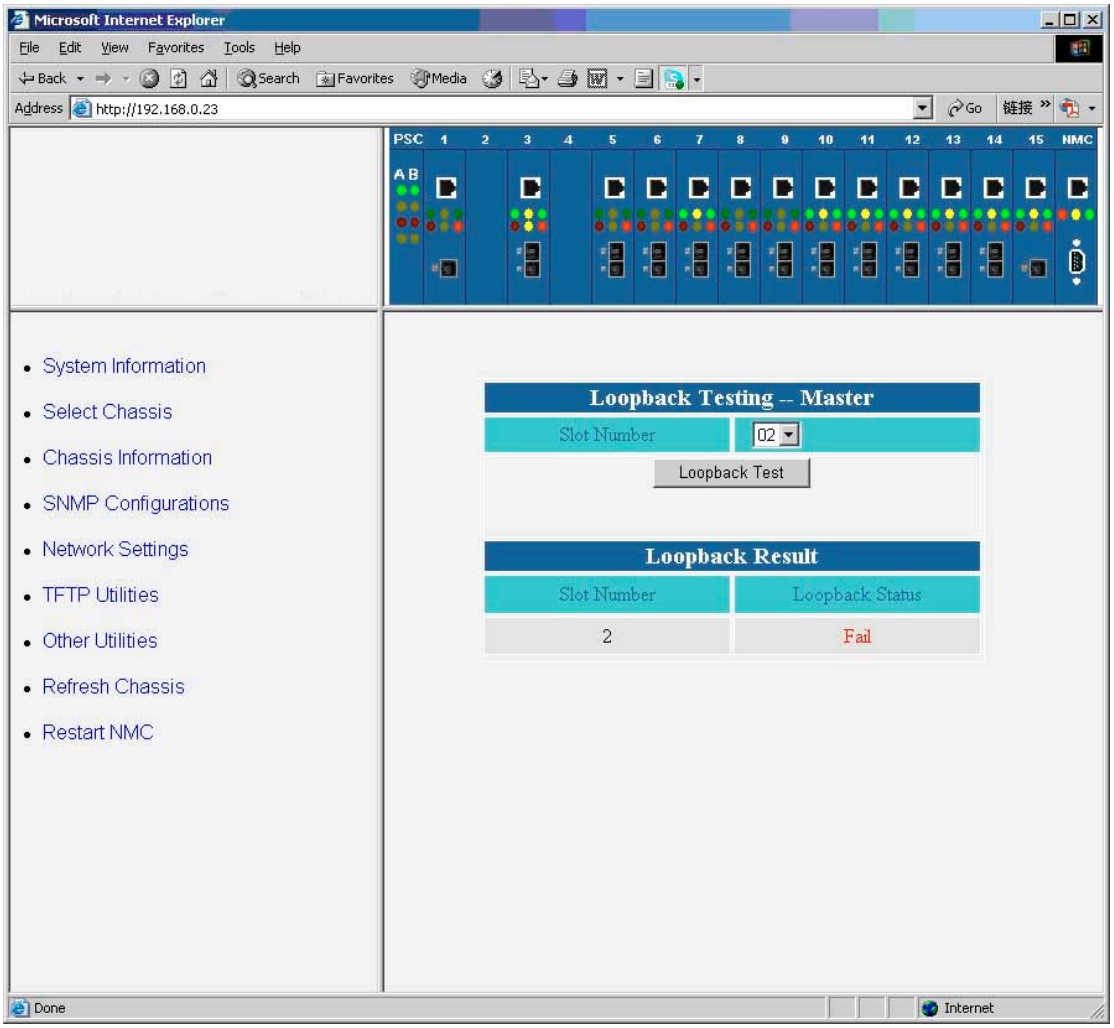


To do the loopback test, you shall follow the two procedures:

- Select the card number to be tested, and click “Loopback Test” button, you will see the following page:

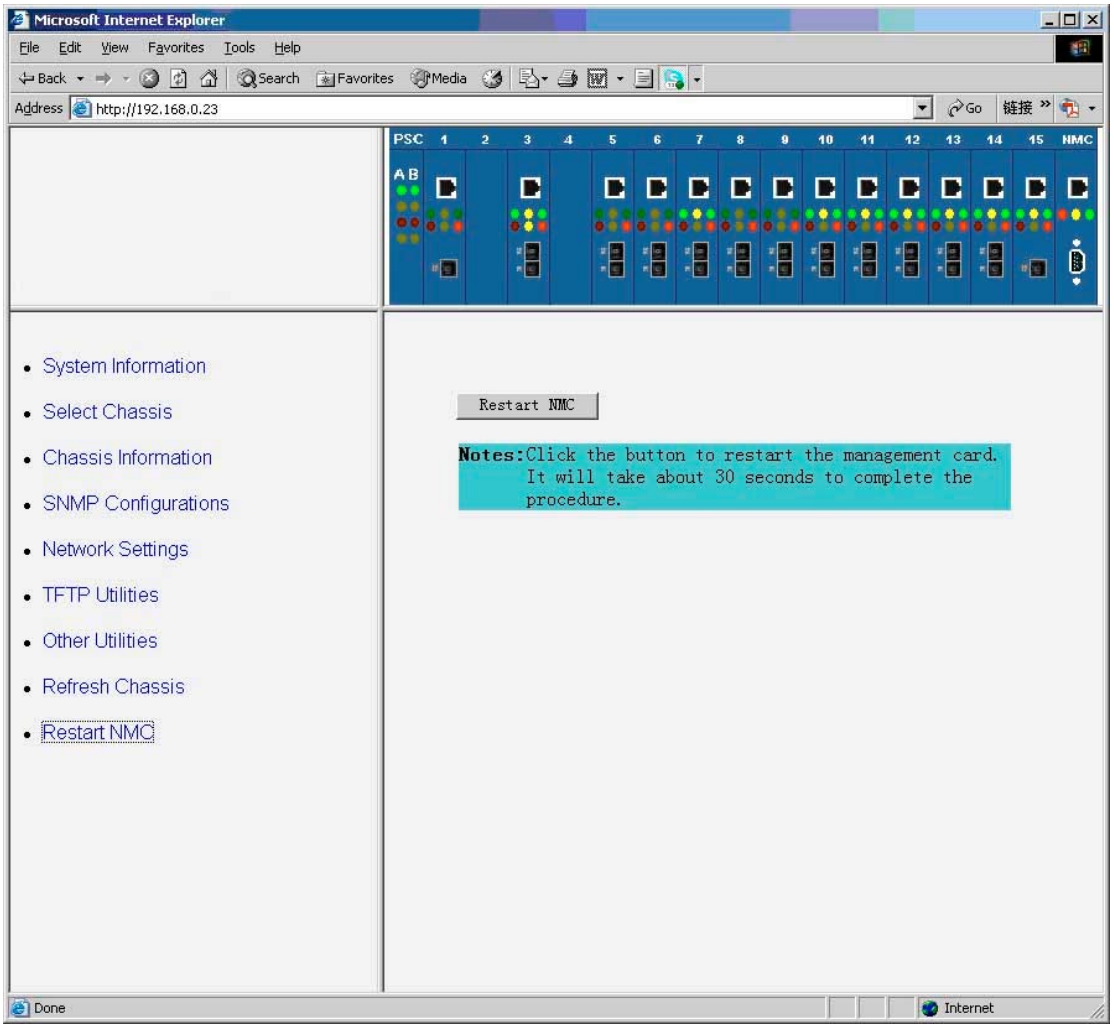


- After a few seconds, the loopback test result will be shown as following:



3.8 Restart Chassis

By clicking the “Restart Chassis” button, you can restart the management module with all the setting unchanged.

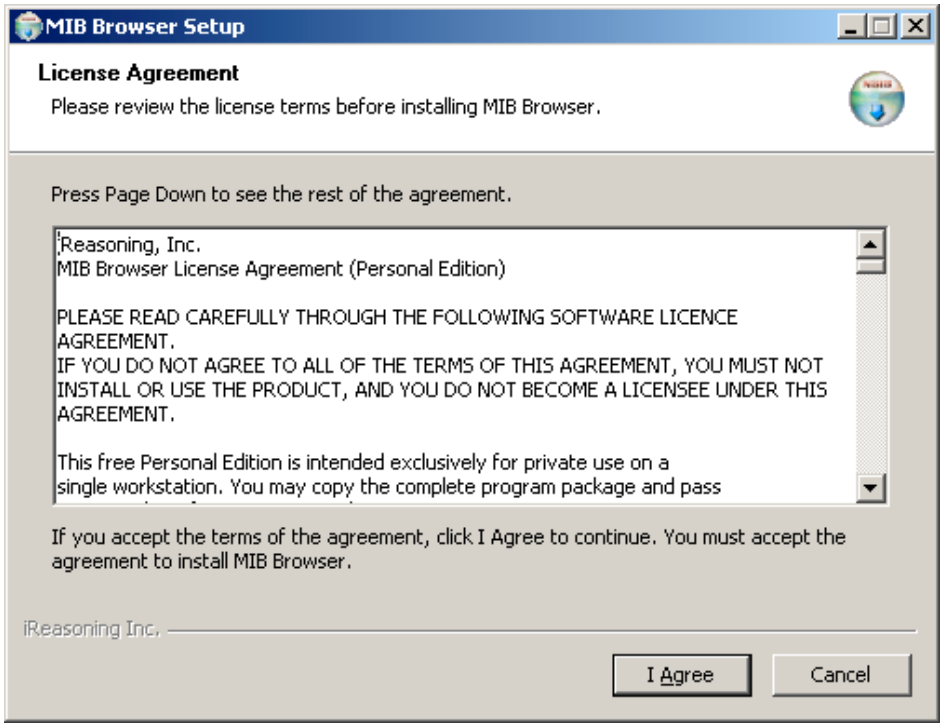

Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://192.168.0.23
Go 链接
PSC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 NMC
A B
System Information
Select Chassis
Chassis Information
SNMP Configurations
Network Settings
TFTP Utilities
Other Utilities
Refresh Chassis
Restart NMC
Restart NMC
Notes: Click the button to restart the management card. It will take about 30 seconds to complete the procedure.
Done
Internet

4 SNMP Monitor

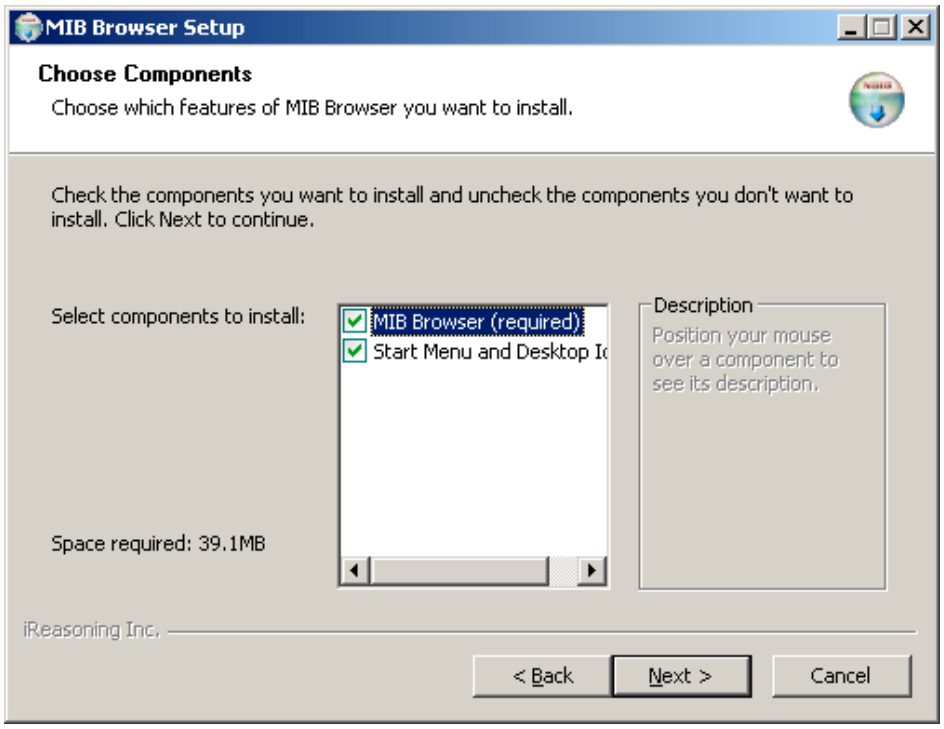
GMC200 supports standard Ethernet management protocol, user can monitor GMC200 through SNMP software. The following examples are taking 'MIB-Brower' from iReasoning company to monitor GMC200.

4.1 Software Installation

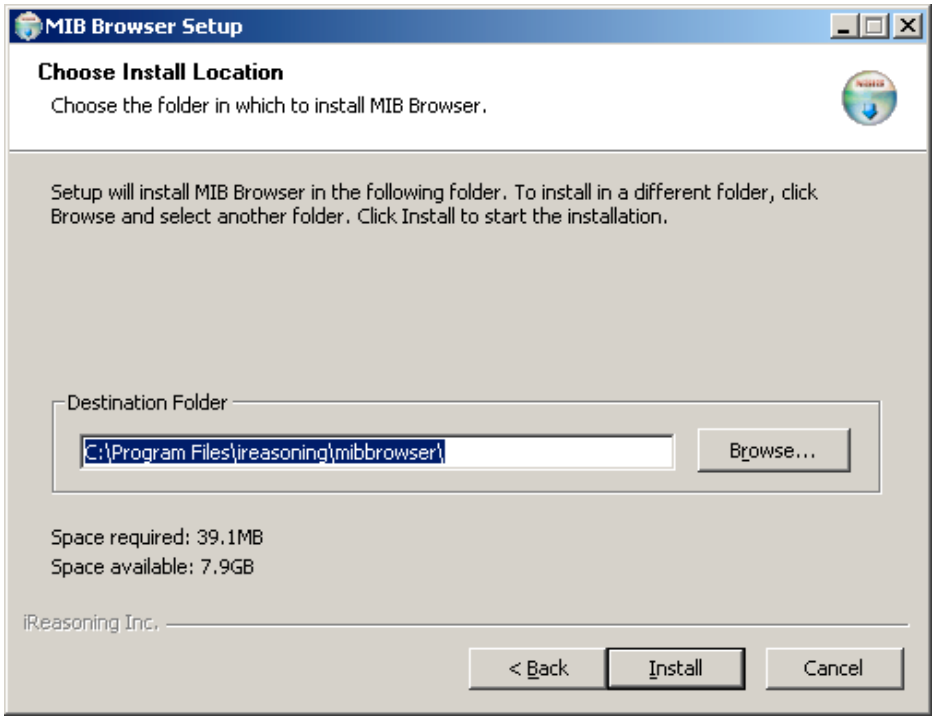
Double click the installation file; it will come on a figure like this,


MIB Browser Setup
License Agreement
Please review the license terms before installing MIB Browser.
Press Page Down to see the rest of the agreement.
Reasoning, Inc.
MIB Browser License Agreement (Personal Edition)
PLEASE READ CAREFULLY THROUGH THE FOLLOWING SOFTWARE LICENCE AGREEMENT.
IF YOU DO NOT AGREE TO ALL OF THE TERMS OF THIS AGREEMENT, YOU MUST NOT INSTALL OR USE THE PRODUCT, AND YOU DO NOT BECOME A LICENSEE UNDER THIS AGREEMENT.
This free Personal Edition is intended exclusively for private use on a single workstation. You may copy the complete program package and pass
If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install MIB Browser.
iReasoning Inc.
I Agree
Cancel

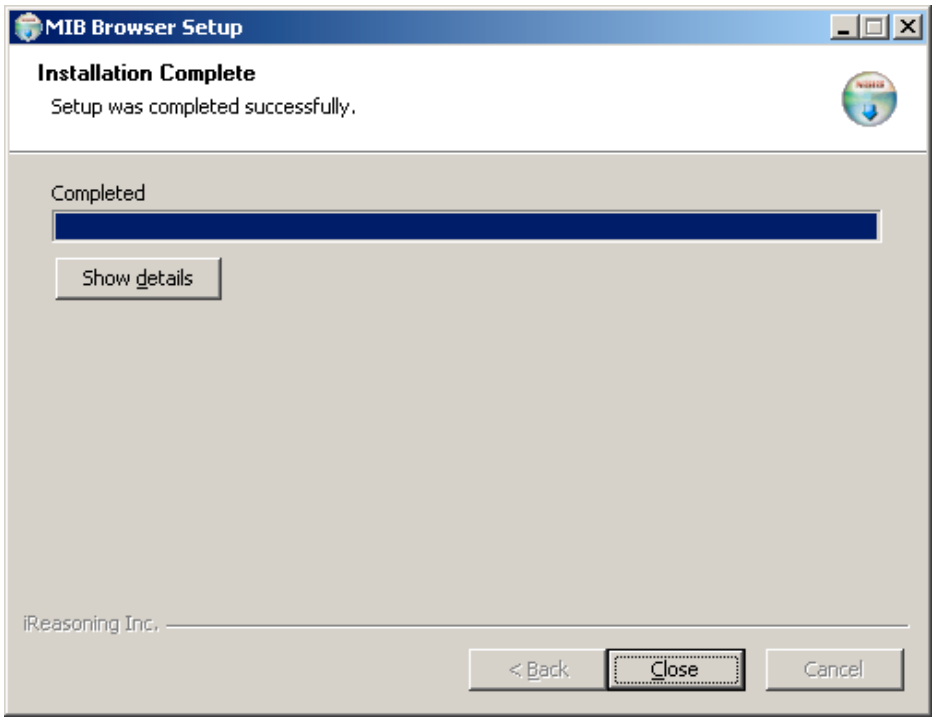
choose "I agree"


MIB Browser Setup
Choose Components
Choose which features of MIB Browser you want to install.
Check the components you want to install and uncheck the components you don't want to install. Click Next to continue.
Select components to install:
MIB Browser (required)
Start Menu and Desktop Ic
Description
Position your mouse over a component to see its description.
Space required: 39.1MB
iReasoning Inc.
< Back
Next >
Cancel

Choose “Next” to select both MIB Brower and Start Menu and Desktop Icons.


MIB Browser Setup
Choose Install Location
Choose the folder in which to install MIB Browser.
Setup will install MIB Browser in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.
Destination Folder
C:\Program Files\ireasoning\mibbrowser\
Browse...
Space required: 39.1MB
Space available: 7.9GB
iReasoning Inc.
< Back
Install
Cancel

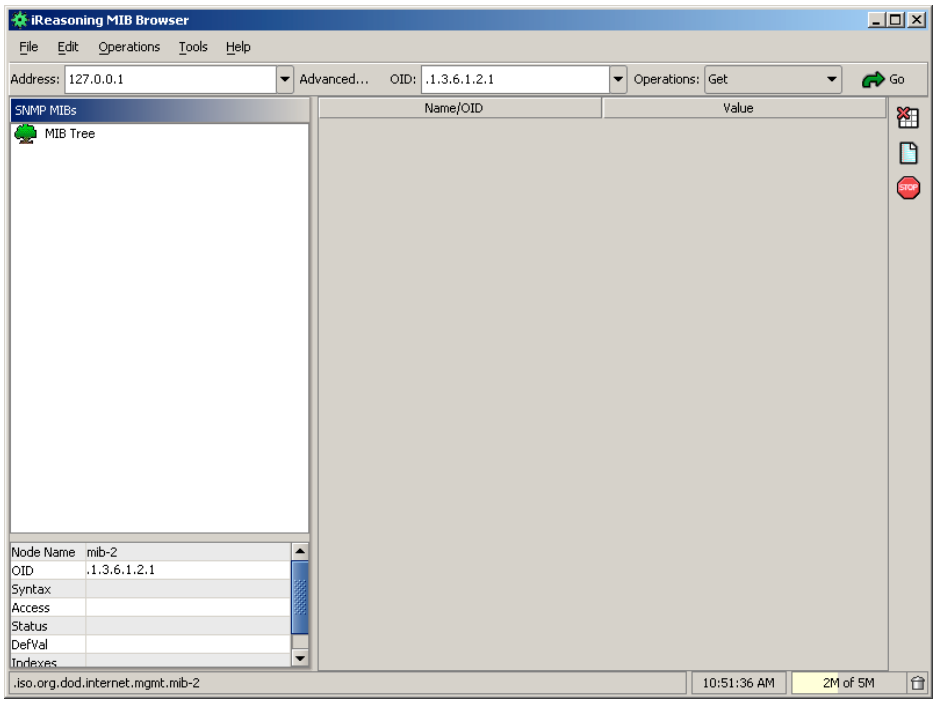
Choose an installation location.

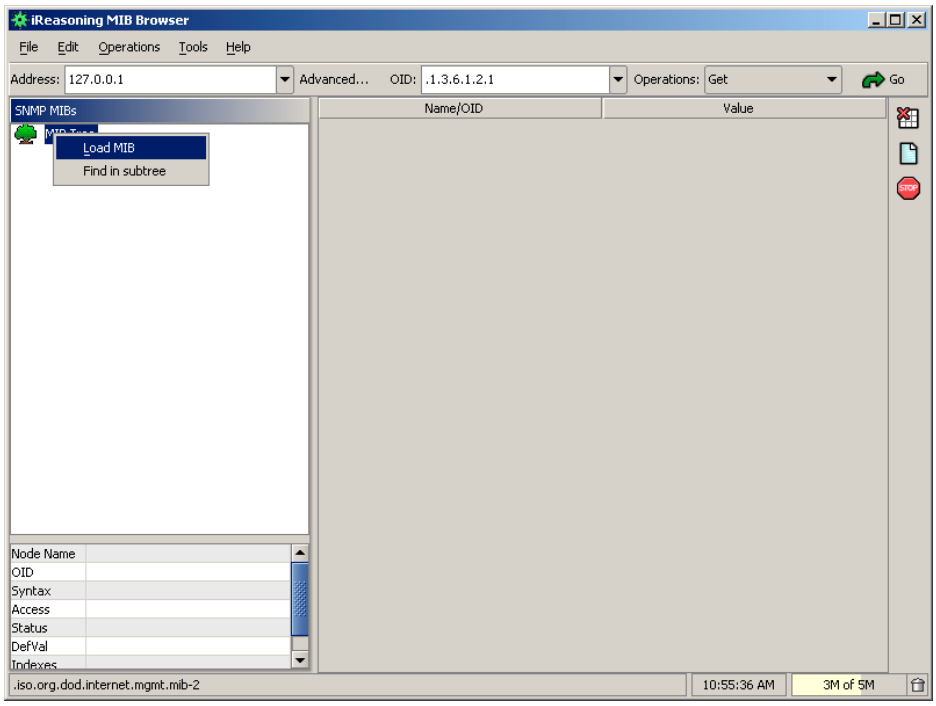


Click “Close” to complete the installation.

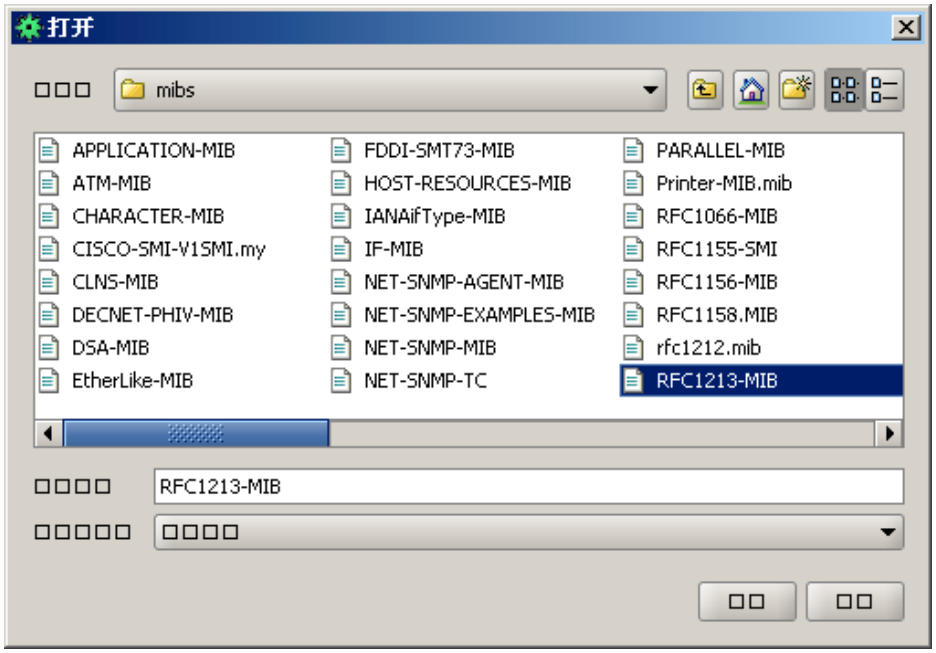
4.2 MIB Brower Usages

Launch MIB Brower, the following figure will be shown.



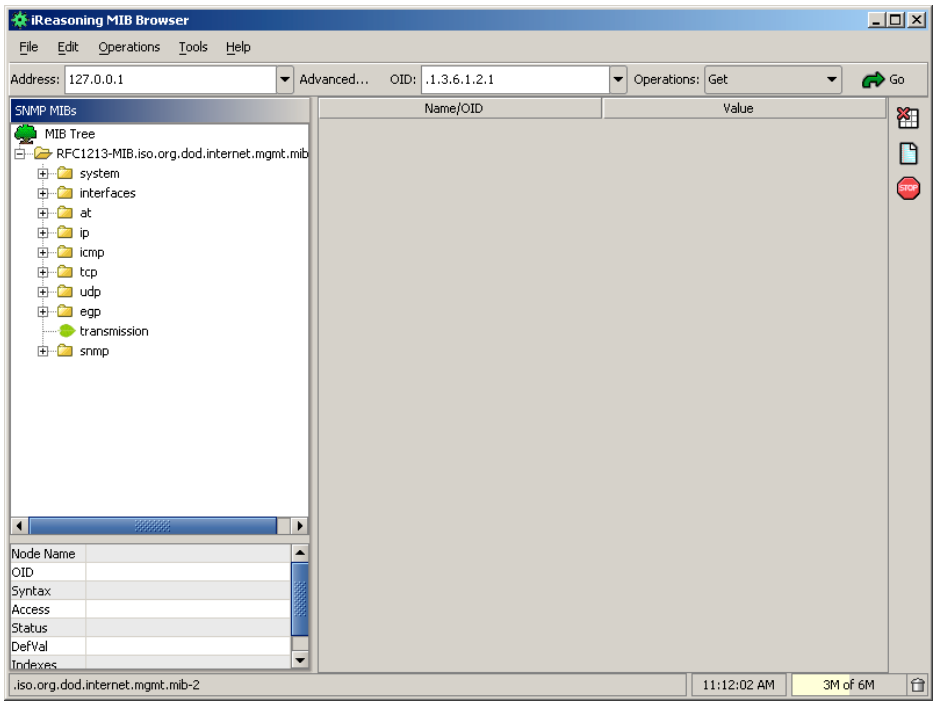


User can load a MIB file to the MIB tree on the top-left.

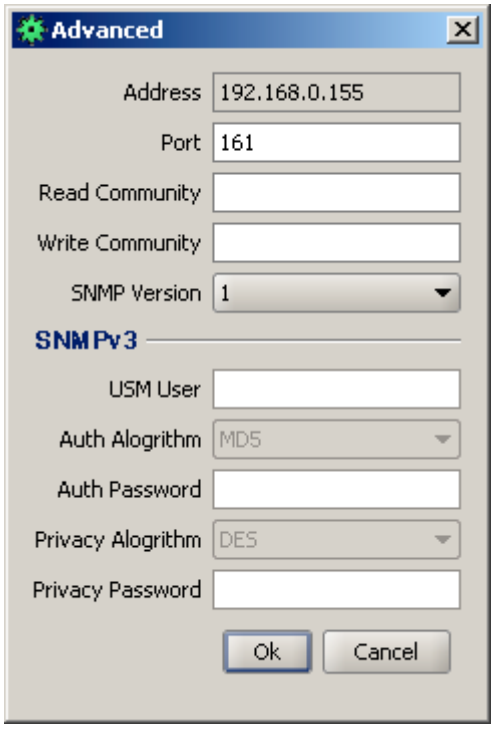


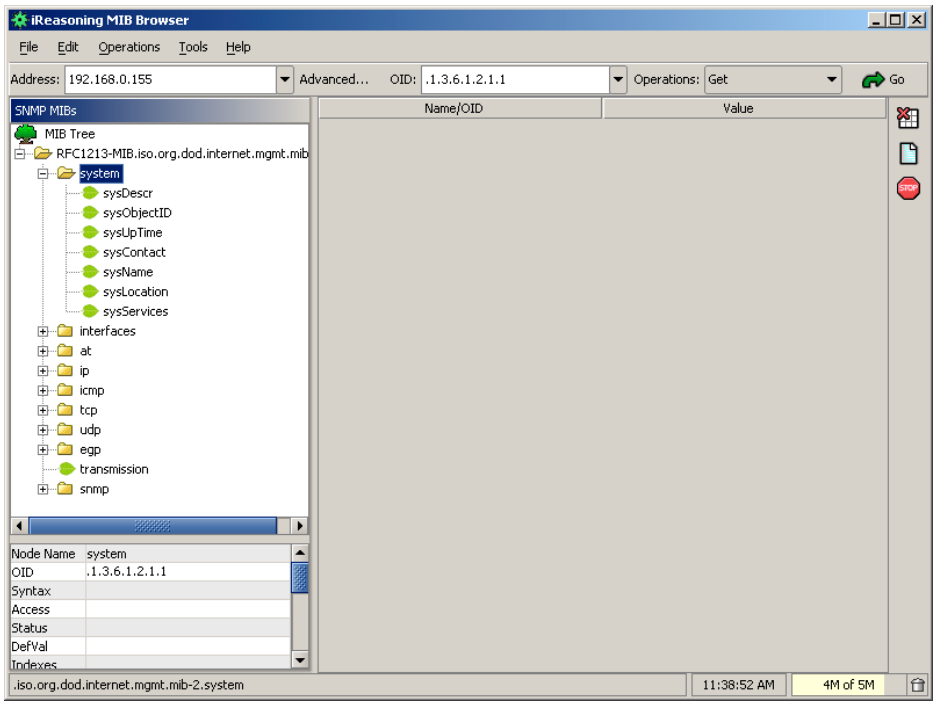
Choose RFC1213-MIB

The RFC1213-MIB and its associated nodes will be shown like this.

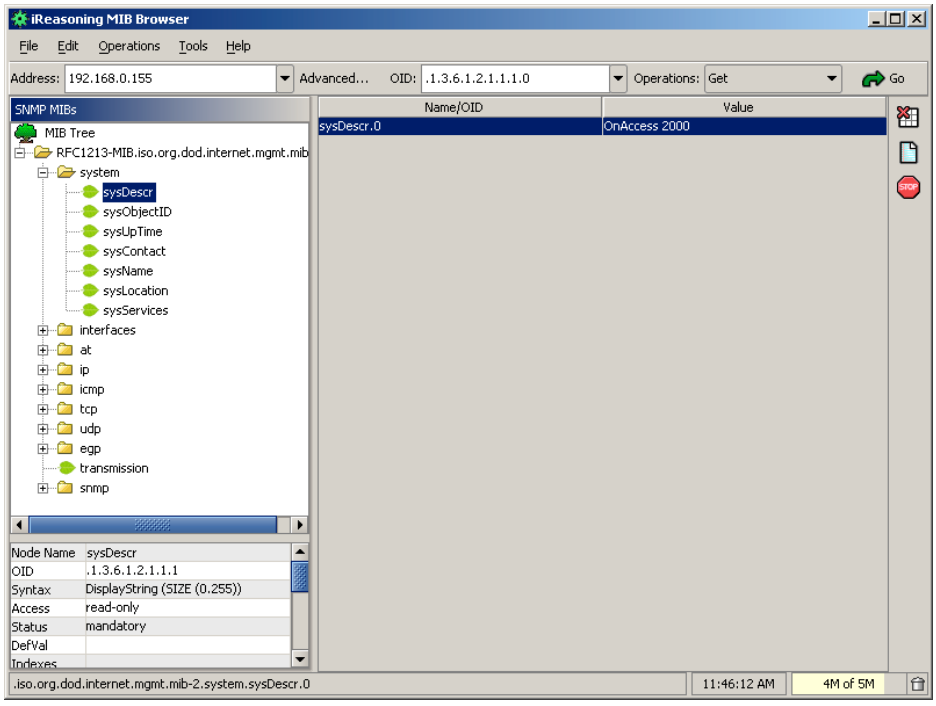


To monitor the GMC200, it required to Input the correct IP address to the Address column, and click the “advanced…” button, set up the correct read and write community.





Select “system”, all system node information are listed. Choose “sysDescr” node and choose “Get” Operation; when the “Go” button has been clicked, the system description of GMC200 will be given as follow.



However, if the “walk” operation has been chosen at this point, all node information will be listed on the MIB Brower.

5 Command Line Interface (CLI)

GMC200 management software also provides a command line interface (CLI) to manage and monitor the system. You can follow the console setting information listed below and use the Windows HyperTerminal or other type of serial terminal emulation program to perform the system management. You can also invoke the CLI using telnet utility from any computer, which has Ethernet connection to the network management card.

COM Properties

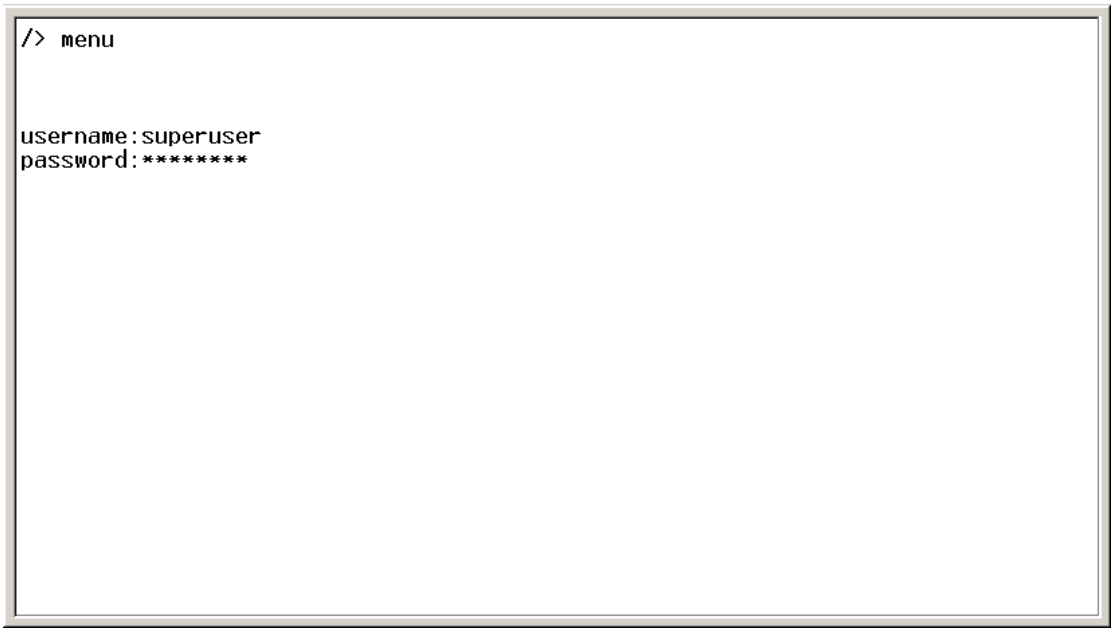
- Bits per second = 57600
- Data bits = 8
- Parity bit = None
- Stop bits = 1
- Flow control - None

ASCII Setup

- Append line feeds to incoming line ends
- Wrap lines that exceed terminal width.

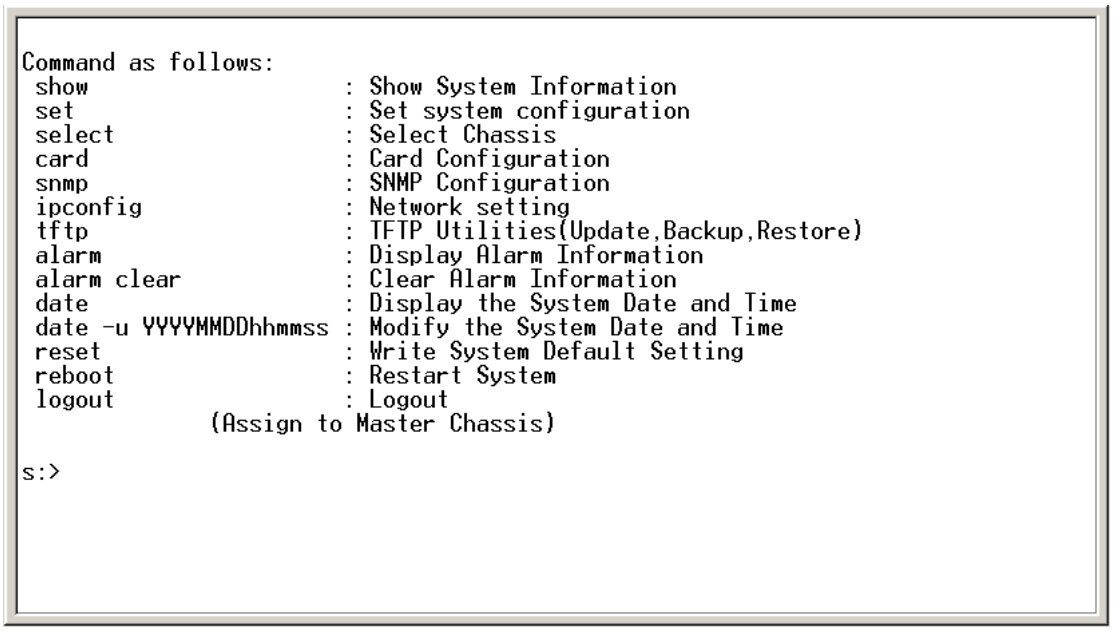
5.1 Main Command Menu

Having setup the terminal at the PC side and connected the terminal to GMC200 network management card via straight through DB9 cable, you can start the network management by typing “menu” at the terminal side , then you will be asked to type the user name and password, as shown below, in order to login to the management windows.



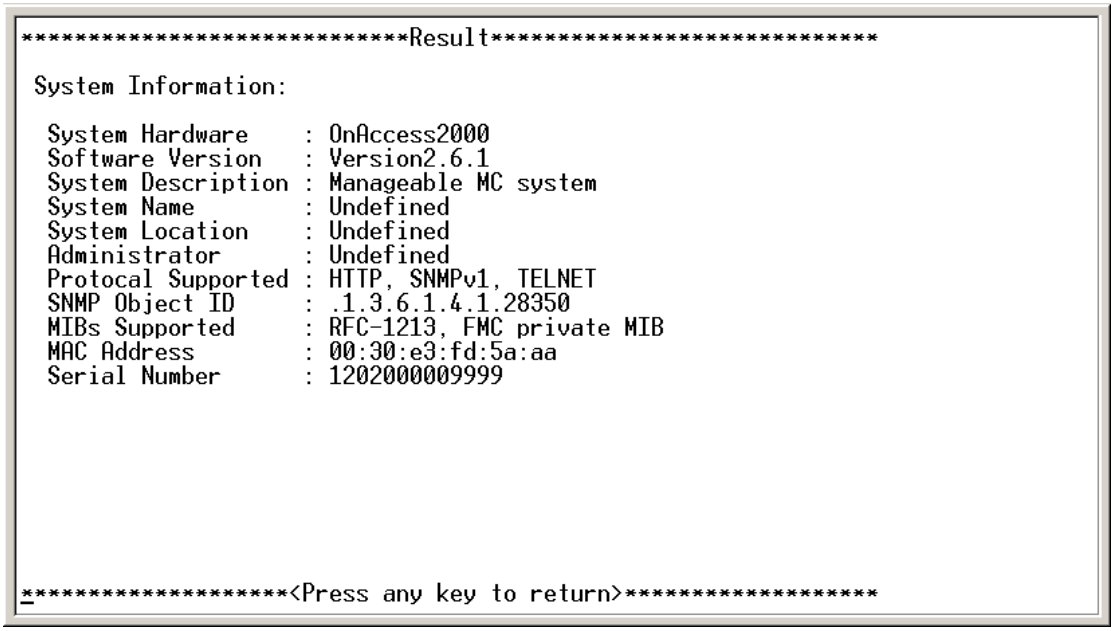
With the correct user name and password from one of the three login accounts, the command line management window as shown in the following

figure will be activated.


Command as follows:
show : Show System Information
set : Set system configuration
select : Select Chassis
card : Card Configuration
snmp : SNMP Configuration
ipconfig : Network setting
tftp : TFTP Utilities(Update,Backup,Restore)
alarm : Display Alarm Information
alarm clear : Clear Alarm Information
date : Display the System Date and Time
date -u YYYYMMDDhhmmss : Modify the System Date and Time
reset : Write System Default Setting
reboot : Restart System
logout : Logout
(Assign to Master Chassis)
s:>

5.2 System Information

The system information will be shown after you type “show” command in the command line as below. Some of the listed information here can be modified by “set” command described in later section.



5.3 Card Commands

Card commands are associated with showing the port status and configuring the local and remote converters. By typing “card” on the command line, all the card commands will be listed as show in the following figure.

```
*****************************Result*****************************
 Card Commands:
 card stat                  -- Show all cards status
 card pre                   -- Show all cards present
 card infor #               -- Show card # information
 card mibc #                -- Show card # MIB counters
 card loc                   -- Show all cards location
 card lloc # xxxxxxxx       -- Set card # local location
 card rloc # xxxxxxxx       -- Set card # remote location
 card lb #                  -- Card # Loopback Test
 card reboot #              -- Reboot card #
 card reset #               -- Reset card # configuration
 card RFD # x               -- Enalbe/Disable card # RFD
 card mod # LM RM           -- Set card # speed and duplex
 card bw # Tm+/-Tk Rm+/-Rk  -- Set card # TX & RX bandwidth
 NOTE:
   x:  0=disable, 1=enable
   LM: Local  card Tx Mode(10F,10H,100F,100H,AUTO)
   RM: Remote card Tx Mode(10F,10H,100F,100H,AUTO)
   Tx bandwidth: 'Tm' M plus 'Tk' bps
   Rx bandwidth: 'Rm' M plus 'Rk' bps
     Tm/Rm: (1~9,10,15,20,25,....,90,95,100)M
     Tk/Rk: (0~800)
********************<Press any key to return>********************
```

“card stat”, “card pre”, “card infor” and “card loc” commands are used to display the card status, card present, card information and card location information, respectively, as shown in the following figures. While the rest of the commands are used to configure the system. It is important to note “#” in the above command represents card number or slot number, where 1 ~ 15 will correspond to the converter in the slot. Number “0” is a global selection for the slots, i.e. if number “0” is used in these commands, it means that slots 1 ~ 15 will be selected at the same time.

The converter’s downstream and upstream rates are controlled by the “card bw” command. The command requires three parameters, the first parameter refers to the slot number where the converter resides in, and the second and third one are the downstream and upstream rate setting, respectively, for example “1+200” means the rate setting of “1M + 200 *128K”.

```
*****************************Result*****************************
 The following statuses are for Master Chassis:

            Local Card                    Remote Card
       |-------Tx-------| |--Fx---|  |---------------|
 CardNo Link Auto Spd Dup  Link Dup   Link Auto Spd Dup
 card1  Down ---- --- ---- Down ----  ---- ---- --- ----
 card2  [Card is Removed]
 card3  Up   On   100 Full Up   Full  Down ---- --- ----
 card4  [Card is Removed]
 card5  Down ---- --- ---- Down ----  ---- ---- --- ----
 card6  Down ---- --- ---- Down ----  ---- ---- --- ----
 card7  Up   On   100 Full Down ----  ---- ---- --- ----
 card8  Down ---- --- ---- Down ----  ---- ---- --- ----
 card9  Down ---- --- ---- Down ----  ---- ---- --- ----
 card10 Up   On   100 Full Down ----  ---- ---- --- ----
 card11 Up   On   100 Full Down ----  ---- ---- --- ----
 card12 Up   On   100 Full Down ----  ---- ---- --- ----
 card13 Up   On   100 Full Down ----  ---- ---- --- ----
 card14 Up   On   100 Full Down ----  ---- ---- --- ----
 card15 Up   On   100 Full Down ----  ---- ---- --- ----


********************<Press any key to return>********************
```

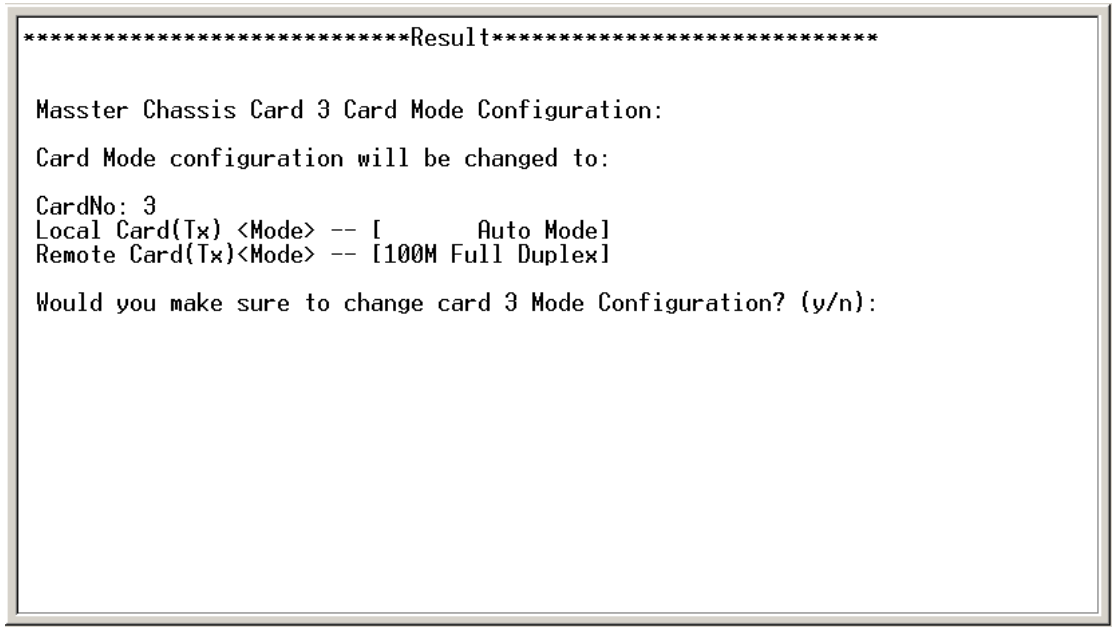
```
*****************************Result*****************************

 Masster Chasiss Card Present:

 Card Number:     Status
   card01       [Actived]
   card02       [Removed]
   card03       [Actived]
   card04       [Removed]
   card05       [Actived]
   card06       [Actived]
   card07       [Actived]
   card08       [Actived]
   card09       [Actived]
   card10       [Actived]
   card11       [Actived]
   card12       [Actived]
   card13       [Actived]
   card14       [Actived]
   card15       [Actived]



********************<Press any key to return>********************
```

```
*****************************Result*****************************
 Masster Chassis Card 03 Information
 Local Converter Status:
  Status               : Actived
  Card Type            : OnAccess-S-D, 20km
  TX Link Status       : Up
  TX Speed             : 100Mbps
  TX Duplex            : Full Duplex
  FX Link Status       : Up
 Local Converter Configuration:
  DownStream Bandwidth : [100M] + [   0]*32Kbps
  UpStream Bandwidth   : [100M] + [   0]*32Kbps
  TX Speed/Duplex Mode : Auto Mode
  Remote Converter     : Connected with Remote Converter

 Remote Converter Status:
  Location             :
  FX Link Status       : Up
  TX Link Status       : Up
  TX Speed             : 100Mbps
  TX Duplex            : Full Duplex
 Remote Converter Configuration:
  TX Speed/Duplex Mode : Auto Mode
*******************<Press any key to return>*******************
```

```
*****************************Result*****************************

 Masster Chassis card 3 MIB Counters:

 RxLoPriorityByte  : 0          Rx128to255Octets     : 0
 RxHiPriorityByte  : 0          Rx255to511Octets     : 0
 RxUndersizePkt    : 0          Rx512to1023Octets    : 0
 RxFragments       : 0          Rx1024to1522Octets   : 0
 RxOversize        : 0          TxLoPriorityByte     : 0
 RxJabbers         : 0          TxHiPriorityByte     : 0
 RxSymbolError     : 0          TxLateCollision      : 0
 RxCRCError        : 0          TxPausePkts          : 0
 RxAlignmentError  : 0          TxBroadcastPkts      : 0
 RxControl8808Pkts : 0          TxMulticastPkts      : 0
 RxPausePkts       : 0          TxUnicastPkts        : 0
 RxBroadcastPkts   : 0          TxDeferredPkts       : 0
 RxMulticastPkts   : 0          TxTotalCollision     : 0
 Rx64Octets        : 0          TxExcessiveCollision : 0
 Rx64Octets        : 0          TxSingleCollision    : 0
 Rx65to127Octets   : 0          TxMultipleCollision  : 0



*******************<Press any key to return>*******************
```

```
*****************************Result*****************************
 Master Chassis Location Information:
 card1   Local location : Undefined
         Remote location: Undefined
 card2   [Card is Removed]
 card3   Local location : Undefined
         Remote location: Undefined
 card4   [Card is Removed]
 card5   Local location : Undefined
         Remote location: Undefined
 card6   Local location : Undefined
         Remote location: Undefined
 card7   [Card is Removed]
 card8   [Card is Removed]
 card9   [Card is Removed]
 card10  [Card is Removed]
 card11  [Card is Removed]
 card12  [Card is Removed]
 card13  [Card is Removed]
 card14  Local location : Undefined
         Remote location: Undefined
 card15  Local location : Undefined
         Remote location: Undefined
*******************<Press any key to return>*******************
```

```
*****************************Result*****************************

 Masster Chassis card RFD configuration:

 Card 3 RFD will be enabled!

 Would you make sure to change card RFD? (y/n):
```


**********Result**********
Masster Chassis Card 3 Card Mode Configuration:
Card Mode configuration will be changed to:
CardNo: 3
Local Card(Tx) <Mode> -- [Auto Mode]
Remote Card(Tx)<Mode> -- [100M Full Duplex]
Would you make sure to change card 3 Mode Configuration? (y/n):

5.4 Select a Chassis

As single management unit of GMC200 can manage up to four chassis, you must select a chassis at any time before you try to configure and monitor the media converters in the chassis. The four commands used are:

- select master
- select slave1
- select slave2
- select slave3

Where the “master” refers to the chassis with DB9 connecter on the front panel, which is connected to the management terminal. While the “slave1”, “slave2” and “slave3” are the chassis connected via the DB9 cable on the rear panel of the master chassis.

```
**************************Result*********************************

 Connected Active Chassis(es):
  >>Master Chassis is connected
    Slave 1 Chassis is connected


 Select Command:
  select master  --Select Master  Chassis
  select slave1  --Select Slave 1 Chassis
  select slave2  --Select Slave 2 Chassis
  select slave3  --Select Slave 3 Chassis









             <Press any key to return>
************************************************************
```

5.5 Network Information

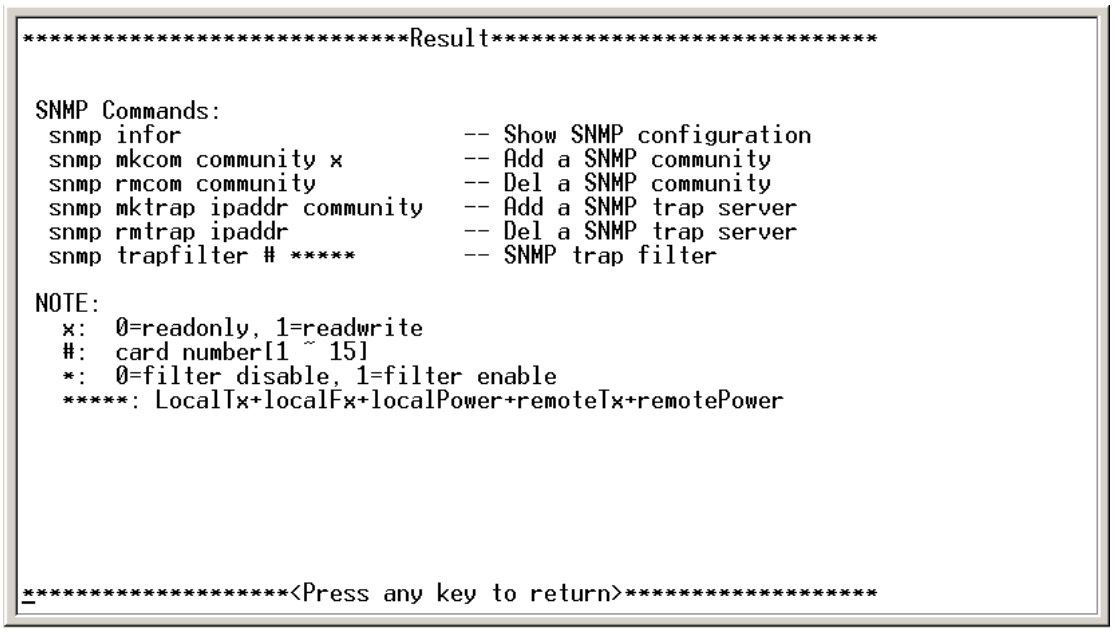
The screen capture shown in the following figure is for the network setting and the related commands. You can follow the command syntax to reconfigure the network settings, which include the IP address, subnet mask and gateway. The default settings shown here are the same as listed in the previous sections in this document.

```
**************************Result*********************************

 Network Setting:
  >IP Address:  192.168.0.155
  >Sub NetMask: 255.255.255.0
  >Gateway:     192.168.0.1

 Ipconfig Commands:
   ipconfig -i xxx.xxx.xxx.xxx  --Modify Network IP Address
   ipconfig -s xxx.xxx.xxx.xxx  --Modify Network Subnet Mask
   ipconfig -g xxx.xxx.xxx.xxx  --Modify Network Gateway









             <Press any key to return>
************************************************************
```

5.6 SNMP

The screen capture shown in the following figure are for SNMP. You shall configure the parameters properly before you can use SNMP to manage GMC200 media converter system. Please refer to the SNMP references for

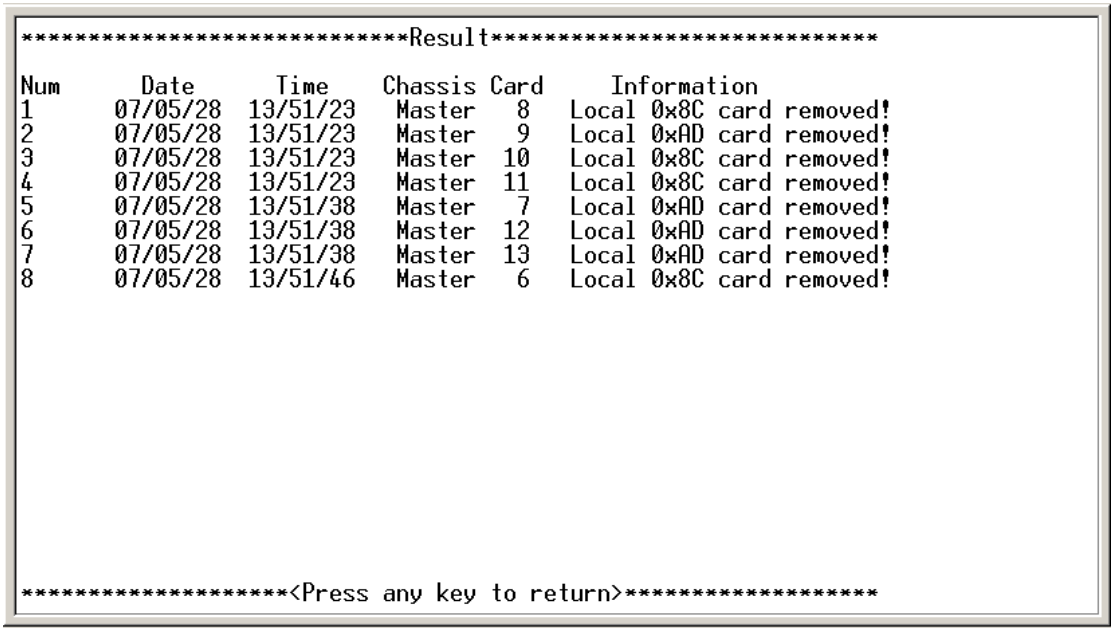
you benefits.


**********Result**********
SNMP Commands:
snmp infor -- Show SNMP configuration
snmp mkcom community x -- Add a SNMP community
snmp rmcom community -- Del a SNMP community
snmp mktrap ipaddr community -- Add a SNMP trap server
snmp rmtrap ipaddr -- Del a SNMP trap server
snmp trapfilter # ***** -- SNMP trap filter
NOTE:
x: 0=readonly, 1=readwrite
#: card number[1 ~ 15]
*: 0=filter disable, 1=filter enable
*****: LocalTx+localFx+localPower+remoteTx+remotePower
**********<Press any key to return>**********

5.7 Alarm

Two alarm associated commands are available for the system administrator. The first one is to list all the alarms logged and the second one is to clear all the previous alarms.

If you type “alarm’ in the main menu, all the alarm will be shown in the screen as captured in the following figure. “alarm clear” command will delete all the logged alarms.

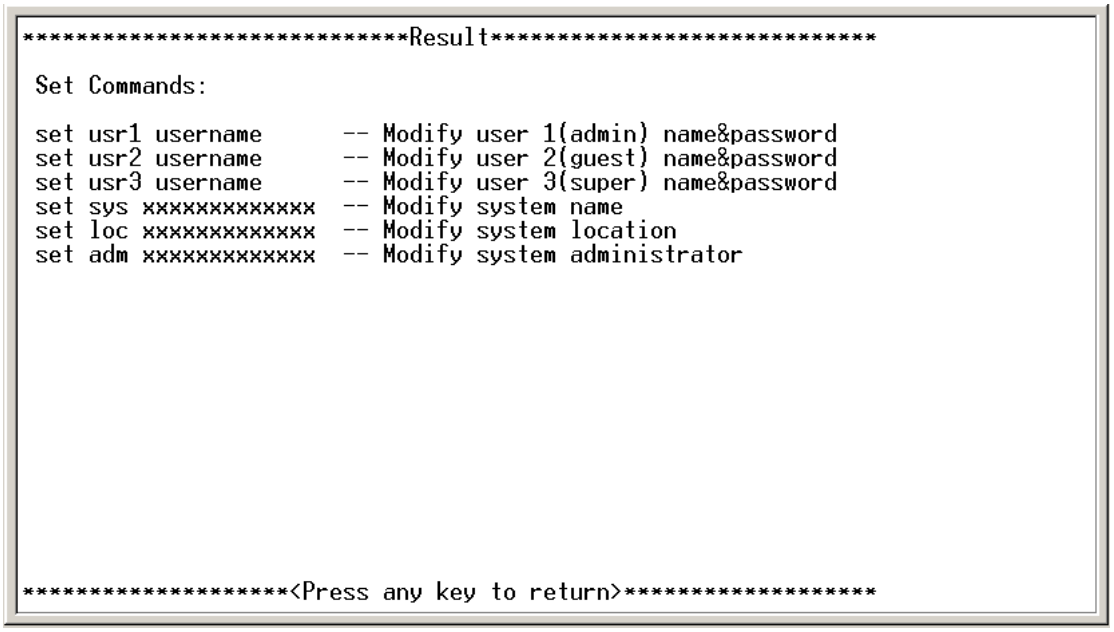

**********Result**********
Num Date Time Chassis Card Information
1 07/05/28 13/51/23 Master 8 Local 0x8C card removed!
2 07/05/28 13/51/23 Master 9 Local 0xAD card removed!
3 07/05/28 13/51/23 Master 10 Local 0x8C card removed!
4 07/05/28 13/51/23 Master 11 Local 0x8C card removed!
5 07/05/28 13/51/38 Master 7 Local 0xAD card removed!
6 07/05/28 13/51/38 Master 12 Local 0xAD card removed!
7 07/05/28 13/51/38 Master 13 Local 0xAD card removed!
8 07/05/28 13/51/46 Master 6 Local 0x8C card removed!
**********<Press any key to return>**********

5.8 Set System Information

There are 6 commands used to set the system information, which include

- User account 1 >> include the user name and the password,
- User account 2 >> include the user name and the password,
- System name >> for easy to identify,
- System description >> what is the chassis for,
- System location >> where the chassis and remote converter located,
- Contact information >> set the administrator's contact information, such as telephone number and name.

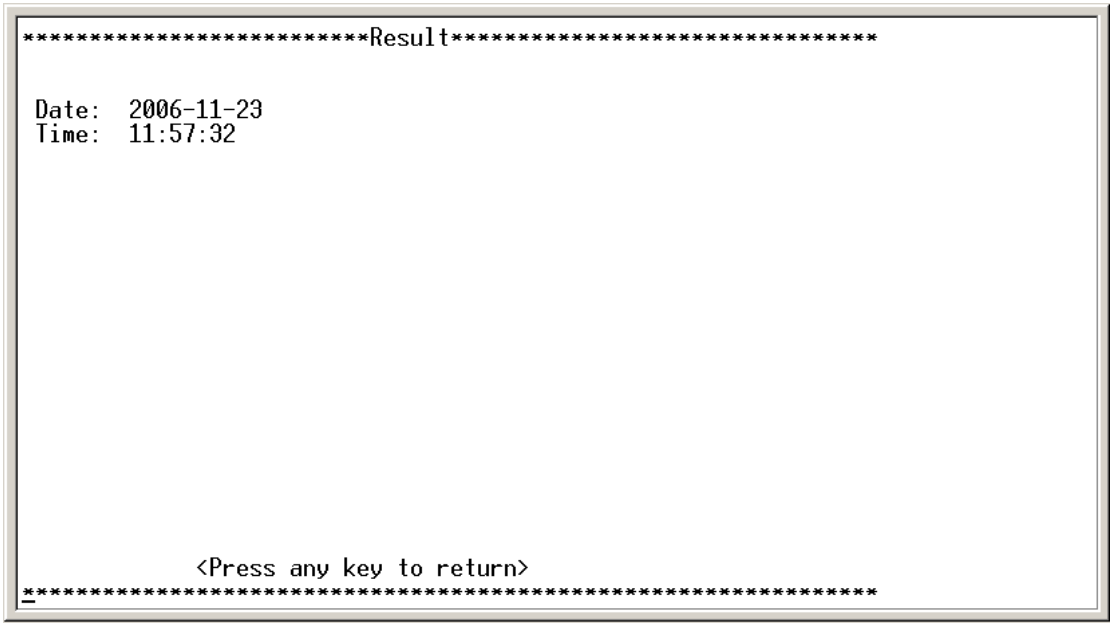
The command syntax is shown in the following figure.


**********Result**********
Set Commands:
set usr1 username -- Modify user 1(admin) name&password
set usr2 username -- Modify user 2(guest) name&password
set usr3 username -- Modify user 3(super) name&password
set sys xxxxxxxxxxxx -- Modify system name
set loc xxxxxxxxxxxx -- Modify system location
set adm xxxxxxxxxxxx -- Modify system administrator
**********<Press any key to return>**********

5.9 Retime System Clock

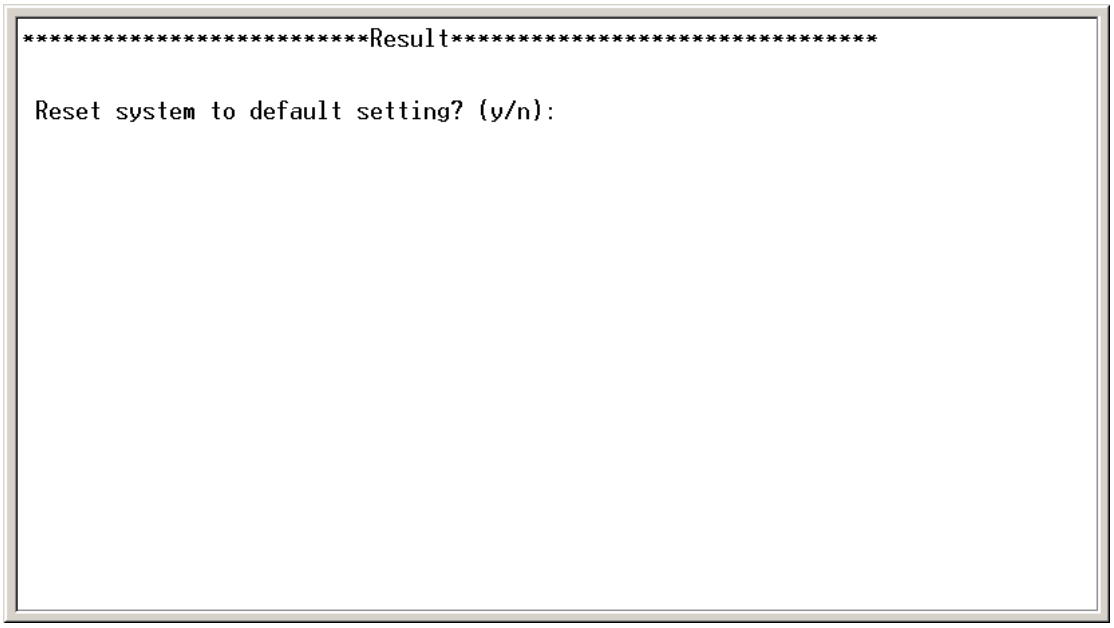
There are two commands related to the on-board retime system clock. "date" command is used to display the date and clock information, while the "date –u" command is to update / modify the system date and clock. The format for the date / time to be typed is "YYYYMMDDhhmmss", where

"YYYY" is four digit of the year,
"MM" is two digit of the month,
"DD" is two digit of the day,
"hh" is two digit of the hour,
"mm" is two digit of the minute, and
"ss" is two digit of the second.



5.10 Reset Command

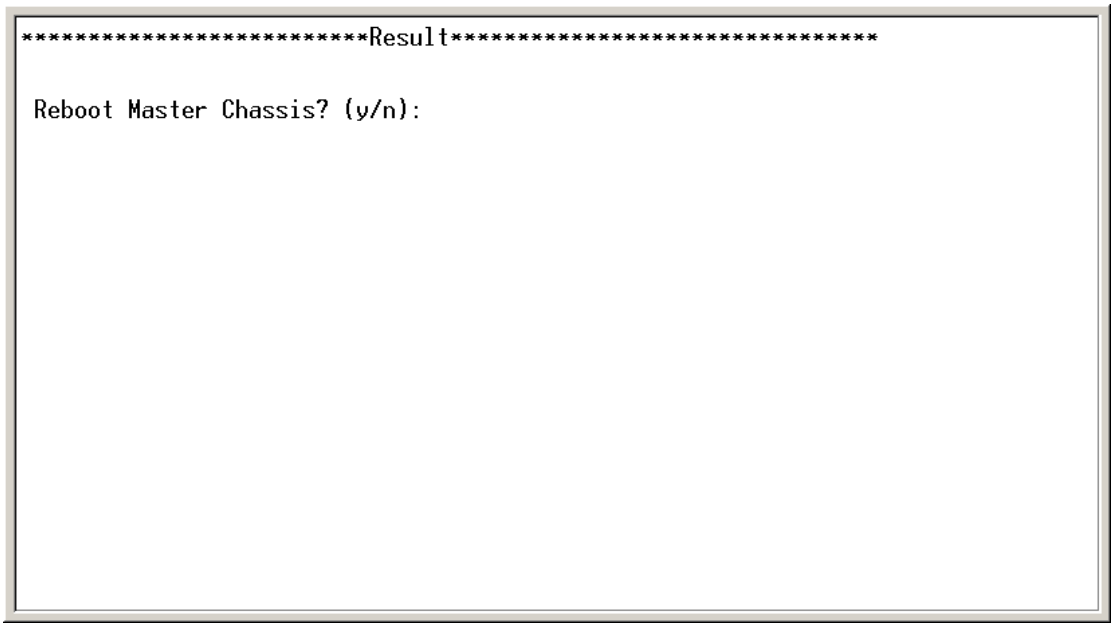
After typing “reset’ in the command line, the following interactive page will appear in the console. You have to confirm the reset action by typing “y”, any other character will lead to end the “reset” command. The “reset” command is used to reset the management software and change all the setting back to the factory default. After “reset” command, you shall reboot the chassis in order to bring the default setting into effect.



5.11 Reboot Command

After typing “reboot’ in the command line, the following interactive page will appear in the console. You have to confirm the reboot action by typing “y”,

any other character will lead to end the “reboot” command. The “reboot” command is used to restart the management software and keep all the setting unchanged.



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